GAS JOURNAL

LIGHT • HEAT • POWER • BYE-PRODUCTS

[Founded in 1849 as the "Journal of Gas Lighting."]

VOL. CLVIII. No. 3081.] LONDON, MAY 31, 1922. [74TH YEAR. PRICE 1s.

OXIDE OF IRON
SPENT OXIDE

GAS PURIFICATION AND CHEMICAL CO., Ltd.
PALMERSTON HOUSE, LONDON, E.C.2.
Telegrams: "PURIFICATION, LONDON."
Telephone: 9144 LONDON WALL.

PUMPING ENGINES
All Types for ACID, &c.
CAST-IRON OR STEEL TANKS
Any Capacity.
CHEMICAL PLANT.
Roots and Girders. Structural Work.
Air and Gas Compressors.
MIXERS.
TAR STILLS AND CONDENSERS.
SULPHATE OF AMMONIA PLANT
W. NEILL & SON, Ld.
Engineers, Iron & Brass Founders,
ST. HELENS JUNCTION.
Telegrams: 'NEILL, ST. HELENS.' Telephone No. 20.

JOHN ELLIS COWCILL,
Colliery Offices:
SILKSTONE COMMON,
Nr. BARNSLEY.
The finest qualities of Screened Gas Coal, Washed Gas Cobbles, Washed Nuts, and Slack.
Telephone: 1 SILKSTONE.
Telegrams: "COWCILL SILKSTONE."

"TORBAY PAINT"
FOR ALL PURPOSES.
The TORBAY PAINT CO.,
26/28, Billiter St., LONDON, E.C.
39/41, Old Hall St., LIVERPOOL.

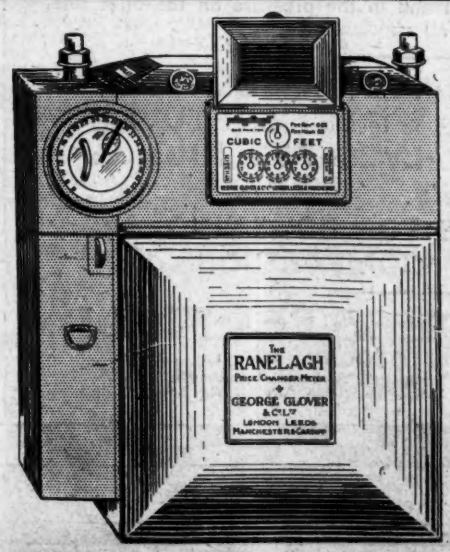
"BLUEBELL"
SILICA RETORTS
(95% SILICA)
John G. Stein & Co., Ltd.,
Castlecary, SCOTLAND.

Telephones: 8966 VICTORIA. 8967 Do.
Telegrams: "GASIFICATION, Sowest, LONDON."
WALTER MOORE & SONS,
GAS COAL & COKE CONTRACTORS,
72, VICTORIA STREET,
LONDON, S.W. 1.

W. & B. COWAN
(Incorporated in Parkinson and W. & B. Cowan, Ltd.),
LONDON. MANCHESTER. EDINBURGH. GLASGOW.
SYDNEY. MELBOURNE. BRISBANE. WELLINGTON, N.Z.
(See Advertisement on p. III. of Wrapper.)

JAMES McKELVIE & CO.
Coal Owners,
Gas and Steam Coal Contractors,
17, RUTLAND SQUARE, EDINBURGH.
59, MARK LANE, LONDON, E.C.
GUILDHALL CHAMBERS, SANDHILL,
NEWCASTLE-ON-TYNE.
24, CHAPEL STREET, LIVERPOOL.
ESTABLISHED 1848.

STEWARTS AND LLOYDS, LIMITED, 41, OSWALD STREET, GLASGOW. BROAD STREET CHAMBERS, BIRMINGHAM.
TUBES & FITTINGS for Gas, Steam, Water, &c.



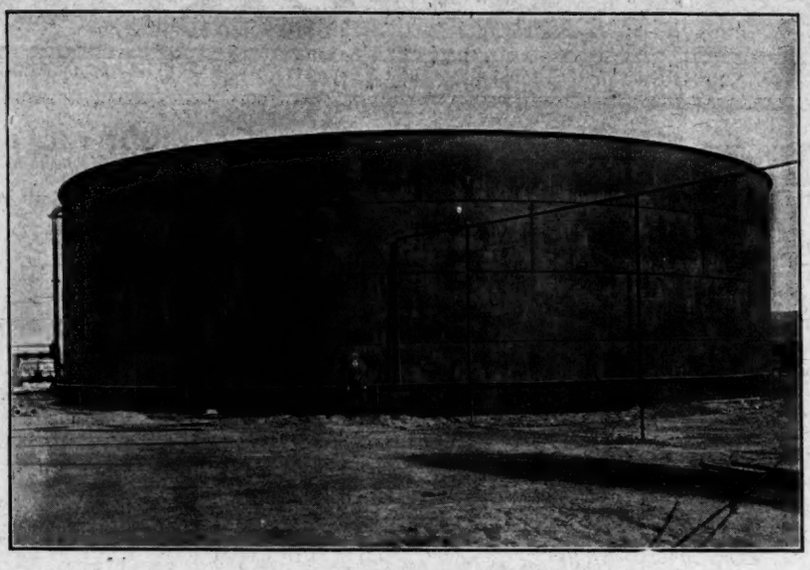
George Glover's New
"Ranelagh"
Price-changer Pre-payment Gas Meter.
All operations are performed from the front; thus the greatest convenience is afforded for consumer. This feature also allows of the Meter being fixed in a corner.
GEORGE GLOVER & Co., LTD.
Ranelagh Works, Royal Avenue, Chelsea, London, S.W.3.
Branches: 9, Dewsbury Rd., Leeds, & City Meter Works, Manchester.

HEAD, WRIGHTSON, & CO., LD., for PURIFIERS, &c. M. & J. DEMPSTER, LTD., CONNAUGHT MANSIONS, 24, VICTORIA STREET, S.W. 1. MANCHESTER.

Costs by using TENNYSON ELASTIC PAINT twice as long as other Paints. TENNYSON, LONDON, S.E. 16.

GASWORKS PLANT | GASHOLDERS PURIFIERS & SCRUBBERS

STEEL and CAST IRON TANKS, PIPES and RETORT FITTINGS, etc.



CONDENSERS and WASHERS

LAMP PILLARS of all Descriptions and Sizes

STEEL TANK, 90 FT. DIA., BECKTON GAS-WORKS.

THE HORSELEY BRIDGE & ENGINEERING CO., LTD.,

London Office:
11, VICTORIA ST., WESTMINSTER, S.W. 1.

TIPTON, STAFFS.

B | DONKIN | D

The Bryan Donkin Company, Ltd.,

SPECIALISTS IN

HIGH PRESSURE GAS DISTRIBUTION AND BOOSTING.

SEND FOR OUR BOOK ON THIS SUBJECT.

WE SHALL BE PLEASED TO SEND ONE OF OUR EXPERTS TO ADVISE;

OUR PLANTS FULFIL ALL CONDITIONS.

OUR PATENT DISTRICT GOVERNORS reduce from any pressure on the inlet up to 50 lbs. per square inch in one stage, down to the ordinary district pressure, and the low pressure is maintained constant, independent of all variations in demand and in the pressure on the inlet side. Absolute certainty of action under all conditions.

HIGH & LOW PRESSURE SERVICE REGULATORS.
REGULATORS FOR METERS, GAS FIRES & STOVES.
PATENT DOUBLE FACED GAS VALVES FOR HIGH & LOW PRESSURES.
RATEAU TURBO GAS EXHAUSTERS FOR BOOSTING, &c.
ROTARY & RECIPROCATING COMPRESSORS.

Head Office & Works: CHESTERFIELD.

London Office: 3, VICTORIA STREET, WESTMINSTER, S.W. 1.

Chesterfield Telephone No. 84.
London Telephone No. 6358 Victoria.

Chesterfield Telegrams, "Donkin Chesterfield."
London Telegrams, "Donkin Vic. London."

B | CHESTERFIELD | D

GAS JOURNAL

LIGHT ✂ HEAT ✂ POWER ✂ BYE-PRODUCTS

[Founded in 1849 as the "Journal of Gas Lighting."]

PROPRIETORS: WALTER KING, LIMITED. OFFICE: 11, BOLT COURT, FLEET ST., LONDON, E.C. 4.

Telephone: Holborn 6857. —— Telegrams: "GASKING, FLEET, LONDON."

VOL. CLVIII., No. 3081.] WEDNESDAY, MAY 31, 1922. [74TH YEAR.

EDITORIAL NOTES.

The Basic Price and Dividend Principle—Suggested Investigation.

AFTER the passing of the basic price and dividend scheme of the South Metropolitan Gas Company, and the consent of Parliament to its application to various other gas companies, it seems rather curious to learn to-day that the principle has not been finally decided, and has yet to be discussed by Parliament. Nevertheless, the authorities are not placing any impediment in the way of the passing of Bills containing proposals for the adoption of the basic price and dividend system. When the Chester Gas Company's Bill was before the Unopposed Bills Committee of the House of Lords last week, Earl Donoughmore incidentally mentioned that "the principle of the basic price and dividend had not "yet been finally decided, and had to be discussed. He "just wanted to point this out, although he was not going "to stop the Bill." From another source, information comes that, in relation to the promotion of Bills in this and last session for the basic price and dividend, the Authorities intend to suggest next session that a Joint Committee of both Houses should be appointed to consider the whole question of this new departure in gas legislation. It was in 1920 that the Act of the South Metropolitan Company was passed; and it seems a singular thing that, after the inquiry then made, and the lapse of so much time, it should be considered necessary to have an investigation into the new system. From the point of view of fairness to all interested, the new system, in our opinion, could not successfully be challenged. Therefore, if there is an inquiry, we feel confident that the method of protecting and making mutual the interests of consumers, stockholders, and employee co-partners will come through without injury.

Windsor Gas Bill and the Unopposed Bills Committee.

ALL through the piece we have been strong supporters of the Board of Trade dealing with the conversion of standard and maximum prices to therm prices, under the conditions laid down in Section 1 of the Gas Regulation Act; but the same thing does not apply to companies who wish to change their condition by an Act of Parliament from a maximum or standard therm price concern to that of a basic price and dividend one—a system first inaugurated, as stated in the preceding note, by the South Metropolitan Gas Company. The Windsor Royal Gas Company have an excellent record in the matter of good management and reasonable prices to the consumers. They have a Bill in Parliament this session, one of the objects of which is to convert the undertaking from a maximum thermal price and dividend to the status of a basic price and dividend company, with participation in surplus profits arising from the reduction of the selling price below the basic price, on the lines of the South Metropolitan and other precedents. On the other hand, the shareholders are not mulct in their basic dividend if, by reason of any increase in the cost of production, the Company are obliged to raise the selling price beyond the basic figure. In the scheme there are three commendable features: First, the consumers are protected—something has to be done for them before additional benefit can be secured by the other interested parties; secondly, the employee co-partners statutorily participate in that benefit to an equal sum with the shareholders; and, thirdly, by the basic dividend being also a minimum one, the disaster that overtook gas stocks during the war through the operation of the sliding-scale is permanently and (who can say to the contrary?) justly obviated.

This is the one object of the Windsor Bill in which we are at the moment interested, and over which it seems to us there is fair ground for complaint—in this particular case—respecting the action of the Unopposed Bills Committee of the House of Commons. The Bill came before them last Wednesday. The fact that the measure was before the Unopposed Bills Committee is a strong point in favour of its proposals, and particularly of this one as to basic price and dividend. However, before hearing a word from the promoters, the Chairman announced that there were certain important points of principle involved which the Committee desired to consider. The room was cleared; and the Director of Gas Administration of the Board of Trade was invited to confer privately with the Committee. What happened behind closed doors, no one outside the room knows; but, on the promoters being allowed to return, the Chairman of the Committee announced that they had decided to delegate the matter of fixing the basic price to the Board of Trade, who had already, be it remembered, settled the therm price under Section 1 of the Gas Regulation Act. This fact distinctly sets this Bill apart from any other in which a Select Committee have referred consideration of the basic price to the Board of Trade.

There were two reasons given by the Chairman of the Unopposed Bills Committee for their action. The first was that, in their opinion, it would be dangerous to give any extension, without safeguards being imposed, to the principle of the basic price as opposed to the old former principle of the standard price; and the other was that they have not the machinery for settling basic prices. Singularly, the same Committee have never confessed to any difficulty in settling ordinary maximum and standard prices. One cannot help feeling that, in the particular circumstances of this case, the transfer by the Unopposed Bills Committee to the Board of Trade of a function which had been delegated to them to perform, is a serious innovation in Private Bill legislation; and the more so as the decision was arrived at without hearing any explanation from the Parliamentary Agent for the Bill, or any justification that he could have advanced for the basic price proposed. Seeing that the Board of Trade had already fixed the therm maximum price for the Company, it does not seem to us that there was anything specially difficult for the Committee to do. In the South Metropolitan case, Committees of the two Houses found no substantial trouble in deciding what would be right in their particular circumstances. All that the Committee had to do in this Windsor case was to adjust, or determine, the difference between the maximum and the standard or basic price. Instead of this, the duty was disposed of by throwing the Windsor Company back to some form of the Swansea basic price clause, under which the fixing of the basic price was referred to the Board of Trade. There is, however, a clear distinction between the present case and the Swansea one, in that in the latter the Board of Trade had not issued their therm Order under Section 1 of the Gas Regulation Act at the time the Bill was before the Committee, whereas in the Windsor case the Order had been made, and was before the Committee.

There is the Cardiff case. Although that Bill was opposed by the Corporation and other parties, the basic price was not really attacked, presumably on the ground that there was not much about which to complain when the proposed basic price was compared with the maximum therm price fixed by the Cardiff Order; and apparently the

Committee also thought so. It seems to us that, in justice to the Windsor promoters, the least the Committee could, and should, have done would have been to receive evidence as to the reasonableness of the basic price suggested; and then, if they really did find a difficulty, either to seek assistance from the Board of Trade, or refer the matter of the basic price to them, as has been done unfortunately without knowing whether the Company could have satisfied them on the point.

It would appear as though in future gas companies may possibly be more fortunate in the Committee room if their Bills are opposed by the local authorities concerned. It is understood that in the Windsor case the basic price for the outlying district was actually agreed with the outside local authority; and evidently the Windsor Corporation were satisfied with the basic price proposed for the borough. In view of these facts, we think the Unopposed Bills Committee might fairly have assumed that the contemplated basic price was *primâ facie* a fair one. The "difficulty" of the Committee was obviously not a difficulty with the local authorities. Looking at the therm maximum and standard prices of neighbouring companies, it seems that the basic price proposed in the Bill compares extremely favourably with them; and therefore the promoters should have had no difficulty in satisfying the Committee that by comparison their suggested price was a reasonable one. In saying all this, we have not the slightest fear that the Board of Trade will not give the Company a reasonable price. But it does appear to us that the Unopposed Bills Committee, by, in a case of this kind, passing on the determination of the basic price to the Board, are putting promoters to considerable inconvenience and delay. They talk of principles and safeguards. There are principles applying to the functions of Committees; there are safeguards (though possibly unwritten) that promoters of Bills in Parliament have a right to have observed.

One other point. We are glad to see that the Committee did not insist on the insertion in the Bill of the auction clauses. Anyone conversant with the working of these clauses—especially in the case of moderate or small sized companies—recognizes that they are cumbrous, and involve great delay in seeing the final result of the capital issued; and, even in the best of times, they are really not, in the case of such companies, the best means that could be devised for raising the cheapest capital. In these days, the clauses are absolutely unworkable; and, so far as we can see into the future, the same statement will, we fancy, have valid application.

Birmingham Gas Profits and the Rates.

We are glad to see a piece of policy applying to this year which it is hoped will be permanent in connection with the trading undertakings of the Birmingham Corporation. The "Birmingham Post" announces that the Tramways Department, the Gas Department, and the Electricity Department all require, and have "earmarked," their surpluses this year for necessary work in connection with plant renewals and reconstruction. Our contemporary says it cannot profess to be sorry that there are no profits to go to the relief of the rates. It is gratifying to find such an influential paper opposed to a practice that we have always opposed as being financially unsound, pernicious, and not in the interests of the best public service. We trust that our hope as to the permanence of the policy will be fulfilled, and that we shall see Birmingham in the van with the Manchester Corporation in putting an end to the indefensible practice of extracting from the pockets of the users of a public service, in order to relieve the rates, profits beyond those necessary for meeting the ordinary obligations and requirements of the service itself. It is a form of indirect taxation that is unjustifiable. Any net profits that are made should certainly be utilized either in improving the undertaking to the ultimate advantage of the consumers, or in directly reducing the price, and so increasing the capacity of the concern for expansion and service to the public. The lower the price of gas, the more attractive will be this labour-saving fuel, and the better the sanitary condition of the atmosphere of Birmingham.

The gas consumers of the city richly deserve a definite decision from the Council that no more gas profits shall be taken in aid of the rates. For interest sake, we have just turned up the accounts of the Gas Department for the last financial year, which include statistics from 1875. There are three or four very striking items to which attention may be called. Since 1876, no less a sum than upwards of £1,600,000 has been taken from gas profits as contributions to the rates. What genuine justification can there be for the appropriation of such an enormous amount as that? The sums transferred to sinking fund total to £1,669,764; and the annuities redeemed, stock cancelled or transferred, and mortgages repaid from sinking fund amount to £1,278,760. The total of the annuities, stock, and mortgages outstanding is £1,730,189—only about £100,000 more than the sum of profits transferred in relief of the rates since 1876! If the money that has been so extracted from the gas consumers (although the undertaking pays a considerable sum annually in rates and taxes, and has not claimed assistance from the ratepayers) had been devoted to the purposes of the undertaking, the Birmingham Gas Department might to-day have been in practically a capital-free condition, and have been selling gas at a price that would have been the envy of nearly the whole country. We cannot see that the ratepayers *quâ* ratepayers have done anything for the gas consumers to deserve from them such substantial consideration as they have received.

During recent years, Birmingham has been working under the Temporary Increase of Charges Act, and so have been denied the right to make excess profits for rate relief; but now the time is coming when the charge for gas will again be falling below the normal maximum price; and then the question of the disposal of surpluses will again have to be discussed. It seems to us that now is a peculiarly appropriate time for Birmingham to break with past rate-relief policy, and to set, with Manchester, an influential example among the municipalities owning gas-works. In the Manchester Act of last session, provisions appeared regarding the application of the gas revenue which make it absolutely impossible for any part of it to be utilized in future for rate relief. The revenue is to be devoted to the expenses incurred in the working and maintenance, renewal, and repair of the undertaking; in payment of interest on moneys borrowed; in providing requisite appropriations for sinking-fund payments; in repaying to the city fund any deficiency in the revenue; in promoting a fund for working capital not exceeding £400,000, the amount set aside annually for which is not to exceed £40,000. Provision is also made for a reserve fund. What follows is the important part of the provision: "The residue (if any) of any such moneys shall "be carried forward to the revenue account of such under-"taking for the next succeeding year, and shall, whenever "and so soon as the amount so carried over exceeds the "sums required to meet the purposes secondly and thirdly "above-mentioned for one year, be applied to the reduction "of the price of gas supplied by the Corporation." There is common sense and justice in that provision. We leave it to the consideration of the Birmingham Corporation Gas Committee, in the hope that they will do likewise.

Are Low-Temperature Carbonization Prospects Brightening?

The advocates of low-temperature carbonization will read with mixed feelings the second section of the report of the Board of Fuel Research on the subject. There is hope in it for them. Encouraging will be the optimism that is found in it that a turning is almost within sight in the long dreary lane of low-temperature carbonization pioneer work and research. But the speculative elements of the process still obtrude themselves, and rather spoil the otherwise brightened view. It will also be felt that the blending of coals or prebriquetting in order to attain good coke structure will also be a complication, and an additional charge upon the process. Then the fact is brought out that the first horizontal steel retort carbonizing plant at the station convinced Sir George Beilby and his staff that an attempt must be made to realize mechanical operation, in order to effect labour saving. The first essay in this direction, while the product is satisfactory, must be counted as disappointing. Notwithstanding, the workers at the station have not given up hope of success. In this connection, there will so far be relief on the part of owners of other low-temperature processes, inasmuch as, though low-temperature carbonizing to be commercially successful requires to secure every particle of economy possible, the unqualified success of the mechanically operated plant at the station would have meant at once the scrapping of all existing processes, over which so much time, patience, and money have been spent. But the scrapping will in all probability come any way, as not one

of the processes has proved its ability to maintain a sound commercial balance under all the variations of economic condition to which they must be subject.

However, Sir George Beilby and his staff have presented all concerned in the art and science of coal carbonization with a very valuable report, and one which will be regarded as classical by all students of the subject. Hitherto, we have had to be content for data as to the low-temperature carbonization of coal upon the reports and statements of those interested in pushing certain plants, specially designed according to the beliefs and ideas of those producing them; and, without the means of putting assertion to working test, it has been perfectly obvious that some of the data have been compounded with considerable exaggeration. Had it all been genuine, low-temperature carbonization would have marched along the road to industrial prosperity without the slightest obstruction. But at present it is as it was. Here we have reliable data, obtained and put before us by disinterested workers; and they bear little or no resemblance to many of the results advanced from other quarters. We know now what can actually be expected from coal or blends of coal carbonized at 600° C., under the conditions obtaining at the Research Station.

The research there has had two objects—one to try to reach a system of operation that shall be technically and economically as perfect as it can be made; and the other, to endeavour to realize the truth respecting quantities and commercial values, so as to judge whether the process will prove itself sound financially. Concerning the former, we have seen that there has not been complete satisfaction, with the mechanical form, owing to the loss of rigidity that occurs in steel at a temperature of 600° C. It has been ascertained that a slight creeping occurs in the moving parts. We also note there is a 33 p.ct. increase in the time occupied in carbonizing; and an amount of supervision is necessary which cancels the labour-saving purpose of the mechanically operated plant. Regarding the commercial soundness of low-temperature carbonization, the speculative elements cannot be wiped out; they will always be with the process. They are beyond the control of those who advocate; and their measurement, except under the definite conditions of the moment, are beyond even the science and the skill found at the Fuel Research Station. Hitherto, there has not been one of the products of low-temperature carbonization that has not been commercially speculative. But the present report tries to put a little more stability into certain of them. The low-temperature people are provided with two seats of hope. The sale of town gas by the therm has altered the position entirely. The rich gas of low-temperature carbonization is, we are told, the best enriching agent that the gas industry can have; and, at current prices for the products, it could be supplied at 4d. per therm. Who is going to guarantee that the gas would be with fair consistence supplied at that price? Who can guarantee that the public will snap up the superior smokeless fuel at a price that would pay for the coal itself? Who can assert that they will pay for a ton of low-temperature coke the price of 1 ton 8½ cwt. of coal; seeing that 1 ton of coal only produces 70 p.ct. of its weight in coke? We are not convinced that the public are yet educated up to this state of things. But upon such unstable conditions, together with the price of fuel oil, depends entirely the price per therm at which the gas can be supplied for enrichment. We should not like an "enriching" gas which has to bear the losses made by its companion products. Who, too, would run the plant? No gas undertaking can afford to indulge in speculation of the kind that the report cannot explicitly say has been removed. It would only be unnecessarily increasing the worries of town-gas producers. But they would have no objection to purchasing gas, where required for enrichment, if it was offered to them at a satisfactory figure. Low-temperature gas would unquestionably be a good enriching agent—being a gas of an intrinsic value of 1000 B.Th.U. per cubic foot; and only 5 p.ct. of it would be required to raise gas of 450 B.Th.U. to 477·5 B.Th.U.

This is one of the hopeful features held out by the report. It is believed that this rich gas will, between the old and the new industries, establish a link the importance of which has not yet been realized. Just in the same way it is believed that the study of the influence on the structure of coke of coal blending and pre-briquetting has thrown so much light on the subject of structure that practical developments of great importance are likely to tend to the establishment of a link between low-temperature carbonization and the coking and metallurgical industries. In other words, hope is held out that low-temperature coal carbonization will establish an indispensable link between itself and other important industries. If it does, then it is thought all will be well. We are asked to anticipate this by trying to look beyond the speculative elements, by visioning the existence of those important links which have yet to be fashioned, and the durability of which depend upon human fancy and willingness to pay, and by assuming the steadiness of markets over which there is no control, with a process regarding which the Fuel Board themselves are not yet satisfied. The computation made in the report—based on coke meeting the cost of coal, 14·5 gallons of crude oil fetching 5d. per gallon, and the gas sold for enriching purposes yielding 4d. per therm, with 30 therms for sale per ton of coal—shows that the revenue from crude oil and gas would be 16s. per ton to meet the costs and charges of manufacture (other than the outlay on coal), and to provide a profit. Would that 16s. be sufficient? It is a figure founded on the careful work at the Research Station, and on current values. There is fine optimism in them. Would, too, the 16s. do what the report seems to suggest it would, and meet in addition all capital charges, wear and tear, renewals, and so forth? The commercial aspect is very vague as it stands. But hope projects from a considerable part of the report. From the review of the situation, it is stated, "it will be evident that we "have not yet reached the stage when a final answer can "be given to the question: Will it be possible to establish "on sound industrial lines a new industry based on the car-"bonization of the tens of millions of tons of coal per "annum which are at present being consumed in the raw "state?" The answer, the report says, is almost within our reach; and "there appear to us to be some grounds for "the expectation that it will be a conditional 'Yes'—the "elements of uncertainty being mainly economic and "social."

Prompt Subscription—Co-operative Local Publicity.

THE British Commercial Gas Association is a purely business organization. It is out to develop and promote the gas business in ways that are businesslike; and it requires to carry-on its own operations according to the most approved of modern methods. The Executive Committee and the permanent officials manage to do this—up to a point. At that point they are unnecessarily handicapped. They have no working capital to enable them to tide-over some of the periods that intervene between outgoings and income—for instance, between the printing of, and sale and payment for, literature. It is highly probable that the Association will never be able to boast of an amount of money which can be labelled "working capital." They have not it now, nor do we see any prospect of their getting it. But in its absence there is another way of helping in respect of this particular financial difficulty. It is that subscriptions should be paid regularly, and as early as possible, in each financial year. We think if subscribers would only realize that the work would be greatly helped and the anxiety of the workers—voluntary and permanent—would be very much allayed by prompt payment, this would be made. Now that there is joint rate of subscription to the National Gas Council, the "B.C.G.A.," and for the research work of the Institution, there ought not to be any difficulty about this on the part of gas undertakings, although the joint subscription has, being in one amount, a bulkier appearance than the former individual sums to the separate organizations. Mention of the matter will probably assist in the acceleration of the payments. However, although there is delay in making them, there is no decline in appreciation of the work that the Association does. On the contrary, there is growth. During the past financial year, there has been a satisfactory increase in the number of the subscribing undertakings. The total at March 31 was 746; and these are responsible for 84 p.ct. of the gas made in the United Kingdom.

We learn about these matters from the report of the Executive Committee which was presented to the General Committee on the 17th inst. Several other subjects were treated upon in that report. They are all good—all having for their object the promotion of the publicity and educational work for which the Association was founded. But the difficulty one has, after having perused these reports, is properly to assess the progress that the Association has made in opening up new avenues of operation and in doing much else, because naturally being an organization with

purposes in which the industry's trading rivals are interested, it would not be politic to talk publicly of all that is done and accomplished. The report therefore deals only with those matters regarding which there may be publicity; but there it stops. Of the general subjects treated (which show the long reach of the activities of the Association), we will only touch upon one—that is, the organization of local publicity campaigns. The report particularly emphasizes the need for local publicity campaigns to supplement and complement the Association's national and district publicity. The administrations of many gas undertakings appear to think that a subscription to the central organization satisfies all needs; but it is not so. The work of that body is general; and much of it is done where local gas undertakings cannot go single-handed. If in circumscribed areas the gas undertakings could co-operate in some parts of their publicity work, so much the better; and we see no reason whatever why such co-operation could not be organized. The main reason for the suggestion as to arranging just now such publicity campaigns is that there is being experienced a gradual trade revival. Some people believe they can see this upward trade movement; others think it is more imaginary than real—at the present time. Actually, the evidence supports the submission that there is in progress a gradual trade revival, which the report tells us is passing "from the theoretical to the practical stage." The Executive Committee see some reflection of this gradual trade revival in the increased demand for the literature of the Association; but they advise that the gradual trade revival should also be fostered by local advertising. In whatever is done in this direction, the Association are prepared to help by suggestion, the preparation of "copy," and the supply of illustrations. This organized co-operative local publicity plan is certainly worth looking into, with the view to ascertain to what extent it can be made mutually effective.

A False Amalgamation Rumour.

There has been, possibly with the view of augmenting stock market values, a rumour of the amalgamation of the European Gas Company with another Company. We have made inquiries of the European Company, and are informed that we may say positively that the Directors know nothing whatever as to any such scheme of amalgamation.

Gas Mantles and the Safeguarding of Industries Act.

The final decision of the Referee in regard to this matter appears on p. 515 of this issue. The terms of the decision are given in such concise form that we leave them as presented.

Board of Trade Gas Returns.

There will be satisfaction in learning that the Board of Trade have listened to representations, and have decided to continue the publication of the returns relating to gas undertakings. It is understood that in future the returns will be divided into two parts. The first part will be of a statistical nature, and will deal with the quantity of gas and residuals made and sold. This information will be required by the Board early in each year, so that this section of the returns may be published (say) by the beginning of May. This being the first year of the new arrangement, there is a little delay.

The Excess B.Th.U.

The "Engineer," in an editorial article, calls attention to the B.Th.U. in excess of the declared value that, the official reports show, have been supplied by the London Gas Companies—a matter to which we also have recently directed notice. It is pointed out that this generosity to the consumers cannot be expected to continue. It will not, as soon as the companies get into a proper stride in therm practices. The adjustment of declared values to the one that can conveniently be most economically produced, together with the raising of distributing efficiency, has already shown itself not only in London, but elsewhere in the country. Our contemporary thinks that the obligation to work to a declared value is very much in favour of the consumers, as, in ensuring immunity from penalties, the gas engineer must necessarily protect himself by giving something away. There is nothing new in this point. It has always been the case that, working to standards—whether illuminating or calorific—gas undertakings have had to provide a margin of safety, owing to unavoidable losses in the distribution system. The change from an illuminating standard to calorific power obligations is an advantage in this respect, since in distribution, particularly in cold weather, gas is prone to lose more in illuminating power than calorific power. However, our contemporary says the changes favoured by the Gas Regulation Act were revolutionary, and necessarily a good deal of caution had to be displayed at the early stages. Events have shown that a too cautious attitude has been adopted. By the changes that have been made, the consumers will not stand to lose; for the additional revenue thus obtained will play its part in reducing therm prices.

Gas Coal Position.

The coal market continues to feel the effects of the home industrial depression. A considerable number of establishments are still inoperative through labour disputes, or are working short time owing to sluggish demand for their products. All coal-fields are, of course, experiencing the results of these conditions; and those results do not find their counterbalance in the brisker export trade that is being done, nor in the inquiries, which have not yet materialized to any considerable extent, for coal for America, owing to the strike. There are hopes that a fair amount of business will (through the interruption to output) be done with the States; but one cannot tell exactly what will happen. The strike itself may have a dramatic ending; or it may well be the American Government will put upon coal a maximum price, which may have an effect upon the quantity imported. With regard to gas coal, an easier tone was noticeable last week in the Durham and Northumberland districts. Some of the special varieties of coal were being offered at 23s. to 23s. 6d. per ton; while secondary classes were available at 20s. 6d. f.o.b. In Yorkshire, it was noticeable that fair supplies of best quality screened coal were being taken; but less was being done in other qualities. In other areas, there was quietness so far as gas coal is concerned. It becomes more and more clear from the invitations that are being issued for tenders that many gas undertakings are becoming again desirous of placing themselves on a firmer basis in regard to supplies. Probably they find it is less worrying to be buying under contract.

The Electricals.

Congratulations to the Institution of Electrical Engineers. Last week the members held their fiftieth annual general meeting, under the presidency of Mr. J. S. Highfield. It was announced that the Council had received intimation of the granting of a Royal Charter to the Institution. Another interesting statement was that the number of students on the register had reached the record total of 2455. The list of the Institution of Gas Engineers looks very small in comparison.

Not a Good Analogy.

The Select Committee who are considering the Bill of the North-Western and Midland railway group, who are seeking to run road traffic, have been very industrious, but the proceedings are spinning-out to considerable length. In consequence, the Committee have decided to meet again after the Whitsuntide recess, with the permission of the House, on June 12, instead of June 20 as originally arranged. Among the witnesses on the opposition side last week we noticed Mr. William Cash, F.C.A., the President of the Institute of Chartered Accountants, and Chairman of the Bournemouth Gas and Water Company. Our interest in the proceedings at the last few sittings has not been great; but just a word with Mr. Jacques Abady, who is appearing before the Committee on behalf of the Chamber of Commerce. According to the newspaper report before us, he informed the Committee that there was no precedent for a statutory undertaking controlling a monopoly being given statutory power to enter the lists with its competitors to compete against itself. The Chairman of the Committee (Lieut.-Col. W. Guinness) was under the impression that canals might be regarded as such a precedent. Mr. Abady considered, if this was a precedent, it was a very bad one. Then he went on to say that, as a rule, Parliament had not conferred upon a statutory gas company powers to provide electric lighting, holding that it was inadvisable for one company to have such powers. Several gas companies have been granted the power, and what Parliament holds

may not in this particular instance be correct. There is a movement for securing a larger amalgamation of gas and electricity interests, for the reason that it is economically advisable for one company to have such powers in the interests of consumers. We think Mr. Abady will agree that—in view of the available fuel, facilities, and staff that there are on a gas-works for introducing a plant for the generation of electricity, as well as the existence of a trading organization—the provision of electricity in many areas could be carried out more economically by a gas undertaking than by a company specially established for the purpose, and everything in connection with which has to be created. Whatever Parliament may hold in this respect may not have economic soundness; and if Mr. Abady is right in his submission, then Parliament ignores the real interests of electricity consumers.

Funds Running Out.

There is not much that is fresh to report in connection with the engineering trades dispute. The Amalgamated Engineering Union last week stepped-down from the high ledge upon which they have been perching themselves, and had a conference with the Engineering Employers' Federation. It ended abortively. There seems only one thing that will bring them round to a more reasonable frame of mind—that is, the incapacity to hold out any longer, and to keep the rank-and-file behind them. As to the forty-seven other unions, the responsible officials decided last week to submit the new provisional agreement to a ballot of the members; and the papers reached them last Friday, with a recommendation that the employers' terms should be accepted. There is no question that the fight is collapsing. The "A.E.U." have, through the force of circumstances, resolved to call a national conference of delegates at York next Friday. On good authority it is stated that the Union can no longer contemplate with equanimity the lock-out dragging on for a long time. Funds are sinking low; the members at work will not agree to a levy of 5s. per week for thirteen weeks; and the Executive of the Union see no possible chance of the employers making further concessions. In labour circles, the opinion is pretty general that the calling of a national delegate conference indicates that the end of the dispute is in sight. The members of the engineering unions have only themselves to blame for the heavy money losses that have been incurred, with nothing very tangible to show on the other side in the way of gains.

Economy in Municipal Government.

Lord Derby is the President of the Association of Municipal Corporations. At their annual meeting last week, he made a strong appeal for greater economy in municipal expenditure—not false economy, but economy with reality in it. Of course, abstention from the spending of money does not always mean economy; the spending may be the means of producing substantial economies. There must always be discrimination between economy-producing and non-economy-producing expenditure. The object of economy, said his Lordship, was to free the taxpayers and the ratepayers of the country from the almost intolerable burdens that are placed upon them, in order to allow them more money for further development of the trade and industries of the country. In his opinion, all support should be given to those who hold the view that, unless there is economy both in national and municipal expenditure, the country is going through an even harder time than it has done already.

Coal Output per Worker.

It was mentioned last week that the output of coal per mine worker was showing an upward movement. This is one of the ways to economy in the mining industry. The "Iron and Coal Trades Review" has published some comparative figures bearing upon the question. While it is admitted that the figures show substantial improvement, our contemporary thinks it is impossible that the industry can get back to the 1913 output while seven-hour shifts remain in operation. However, in the first quarter of last year, there were in the industry on an average 1,213,200 workers, who produced 54,296,000 tons of coal, or a weekly average of about 3·44 tons per worker employed. There was no April-June production. In the September quarter the workers numbered, on an average, 1,041,200; and the output was 52,439,000 tons, or a weekly average of 3·86 tons per worker. During the quarter ending Dec. 31, the output was 57,440,000 tons produced by 1,062,400 workers, representing an output per worker of about 4·15 tons per week. The output to March 31 this year was about 62,000,000 tons; and on the basis of 1,072,200 workers, the output per worker was 4·44 tons per week. Taking the number of workers in the week ending April 1 as approximately 1,080,000, the output per worker during that week would have been 4·46 tons, or at the rate of 223 tons a year. In 1913, with the eight-hour shift in being, the annual output per worker was 259 tons. Even when there is sufficient demand for coal to warrant the employment of the same number of workers as in 1913—1,110,884—the annual production will still be only 87·5 p.ct. of the 1913 output of 287·4 million tons, or about 250 million tons. This is a serious matter; and the miners' leaders would do well to give it their attention. Our contemporary holds that the reduction of the working hours has materially contributed to the present high cost of production, and that there should be a return to the eight-hour day.

PERSONAL.

In presenting the report of the Gas Committee to the Smethwick Town Council last week, Mr. T. W. B. Stephen expressed regret at the resignation of the chairmanship and membership of the Committee by Alderman PINKNEY. He moved a resolution expressing the thanks of the Council for Alderman Pinkney's untiring, unselfish, and invaluable services to the Committee. The resolution was unanimously passed, and Alderman Pinkney replied.

Mr. and Mrs. J. W. BROWN, of Barbados, are on a visit to this country.

Mr. S. BARKER JOHNSON, Engineer and Manager to the Colombo Gas and Water Company, Ltd., Ceylon, is at present in England on a business trip, in connection with certain carbonizing and gasholder extensions which it has become necessary to provide for at the Colombo works, on account of the increased demand for gas, which has risen by nearly 50 p.ct. during the past three years.

At a meeting at Newport last Friday, Mr. REGINALD G. CLARRY, of Swansea, for many years Engineer and Manager of the Swansea Gas Company, and subsequently Manager of the Duffryn Steel and Tinplate Works, Morriston, was adopted as prospective parliamentary candidate in the Conservative interest for the borough. Mr. Clarry is the son of Mr. George Clarry, General Manager and Secretary of the Cardiff Gas Company, of whose works he was Assistant Manager before going to Swansea. Mr. Clarry is a Past-President of the South Wales and Monmouthshire Institution of Gas Engineers and Managers.

Mr. BERT WILDE, of the Bradford Corporation Gas Department showrooms, and Assistant Secretary of the Yorkshire Junior Gas Association, has been elected as one of the fifteen representatives of the West Riding R.A.M.C. who, together with parties from other units which served with the 62nd Division in France in 1918, are to go to France to attend the unveiling of a memorial at Havrincourt, on June 7. The memorial, which takes the form of a handsome obelisk, commemorates the capture of Havrincourt by the Division.

Mr. ARCHIBALD DOUGALL, who went to New Zealand at the beginning of 1910 as Engineer to the Wellington Gas Company, has now resigned this position. His early education was at Mason's College (now the Midland University), Birmingham; and he received his training under his father at the works of the Kidderminster Gas Company. Then for some years he was Assistant to Mr. John Young, the Engineer at the Hull Station of the British Gas Light Company, Ltd. At the time when Mr. Dougall arrived in New Zealand, the gas-works were in the centre of Wellington, the site was cramped, and the plant overworked. A new gasholder had just been erected at Miramar, 4½ miles away from the city works; and it was decided to at once proceed with the erection of a complete works on land adjoining this new holder. The first unit of the new works was brought into operation in July, 1912; the type of retort adopted being the "Dessau" vertical. This plant was so successful that, after one year's experience with it, it was decided to erect a second, but larger, unit, which was completed in December, 1914. It was then possible to shut-down and dismantle the city works. A further extension is being made at the present time, consisting of an installation of six beds of eight retorts each of the Glover-West type, the erection of which is well advanced. With the exception of the holder which was erected before Mr. Dougall went to New Zealand, he designed, laid out, and erected by day labour the whole of the Miramar Gas-Works. The make of gas last year was 517 million c.ft. During the war it was practically impossible to import into New Zealand firebrick materials; and a plant for manufacturing refractories was erected at the gas-works. Very satisfactory retorts and bricks have been made from the local fireclays, which are of an exceedingly good quality. For the same reason, it was necessary to manufacture in the Company's workshops cookers, bath-heaters, and other appliances.

OBITUARY.

THOMAS GLOVER.

We are very sorry to have to record the death, which took place at a Westminster nursing home last Saturday, of Mr. Thomas Glover, of No. 74, Fitzjohn's Avenue, Hampstead. As will unfortunately have been gathered from references in the "Personal" column of the "Journal," Mr. Glover, who was in only his 44th year, had been seriously ill for some time, and had had to undergo a series of operations, the last of which was on the 22nd inst. The greatest sympathy will be felt with Mrs. Glover in this sad termination to the anxious time which she has passed through.

Mr. Glover was educated at Highgate Grammar School, and while there was in the Football Eleven and the Shooting Eight. He served as a Lieutenant in the 1st Volunteer Battalion Middlesex Regiment, from which he resigned on the formation of the Territorial Force. He was a life member of the "N.R.A.," and for many years attended the Bisley Meeting, being included in the Queen's Hundred. On leaving school, he was apprenticed to the firm of Thomas Glover & Co., Ltd., gas-meter manufacturers and engineers, and became Manager of their works at Edmonton in 1900. In February, 1906, on the retirement of his father, the late Mr. John George Glover, he was appointed a Director of the three allied Companies—Thomas Glover & Co., Ltd., R. & A. Main, Ltd., and Glover and Main, Ltd. Then in March, 1910, he was appointed a Managing-Director of Thomas Glover & Co., Ltd.; and in December, 1913, a Managing-Director of R. & A. Main, Ltd., and Glover and Main, Ltd. In July, 1918, on the formation of Glover and Main (Birmingham), Ltd., he was appointed a Managing-Director of that Company.

In February, 1920, Mr. Glover resigned his directorship of the four Companies mentioned; and in May of that year the announcement was made in the "Journal" that he had been appointed to the Board of Alder and Mackay, Ltd., to fill one of the vacancies caused by the resignations, on account of ill-health, of Mr. Alexander Mackay and Mr. John Mackay. During the following July, he was appointed the firm's Managing-Director for London and the South of England.

Readers will be aware that Mr. Glover was a very active member of the Society of British Gas Industries, and that he took a great interest in gas-meter research—frequently speaking at meetings of the Institution of Gas Engineers on reports of the Joint Committee on the Life of Gas-Meters. This activity and interest will be much missed. He was also a Director of the Bland Light Syndicate, Ltd., and of the Wymondham Gas Company. In addition, he was a consulting engineer, and a member of the Institution of Mechanical Engineers. At the outbreak of war, he joined the Metropolitan Special Constabulary Force, and was Inspector-in-Charge of the Detached Post at Edmonton. At the end of 1914, he was appointed Assistant Commander of the N Division. His recent recreations were motoring and yachting; and last year his yacht the "Andrum" won many prizes at the south-east coast regattas.

The funeral was this (Wednesday) morning, at St. Anne's Church, Highgate Rise.

Refrigeration by Gas.

A special effort is being made by the People's Gas Light Company, of Chicago, to increase the use of gas refrigerators in that city; the particular apparatus to which they draw attention being named the "Common Sense Ice Machine." This is operated by town gas, and is, they say, not only immeasurably superior to the ordinary "chunk of ice" method of refrigeration, but it also surpasses all other systems of artificial refrigeration known as compression systems. As the machine possesses no moving parts, there is no need for a motor; and the danger of leaks that moving parts involve is obviated. It may be explained that the gas-burners are placed below a tank containing ammonia and water. The ammonia vaporizes at a comparatively low temperature; and the vapour passes along through water-cooled pipes into a small tank called the receiver. From the receiver it passes to the cooling tank, which occupies the ice chamber space in the refrigerator. Here a chemical action takes place which draws heat from the refrigerator and its contents; and the spent ammonia vapour passes back into the water-ammonia tank from which it first came. The complete cycle is automatic, and continuous as long as refrigeration is needed. The gas-burners are regulated by a thermostat valve in the ice chamber. The slightest tendency to a rise in temperature causes the gas to burn, and the refrigerating action to become active. The machine itself (which can be attached to any good refrigerator) is not much larger than a good-sized travelling trunk. It is most conveniently located in a basement; and pipes can be run to one or more refrigerators on floors above.

Midland Association at Wolverhampton.—The report which is in type of last week's successful visit of the Midland Association of Gas Engineers and Managers to Wolverhampton has unfortunately to be held over owing to lack of space. It will, however, appear in the next issue of the "Journal."

ELECTRICITY SUPPLY MEMORANDA.

The supporters of the Electricity Supply Bill were much perturbed at the beginning of last week over the long delay in resuming the discussion on the Electricity Supply Bill. We feel confident that, although the Government would like to push this Bill through in some form, in order to complete and make effective the Act of 1919, they are not so comfortable about the whole scheme as they were before competent critics set to work to show its defects and speculative character. These have undermined confidence; and yet the Government have either to confess that what they did in 1919 was wrong through following the advice of the electrically dominated Power Committees, or make that legislation (whether good or bad) as perfect as possible by getting money for the joint authorities in some way. They have adopted a crooked way, which naturally does not commend itself to financial authorities, nor to those who have at heart the best interests of the ratepayers of the country. The only way these joint authorities should be financed is to go to the public direct for money. If, with the backing of statutory powers, they are not worthy the support of the public and the industries they are supposed to be going to benefit, then they are not worthy of such an innovation as local authorities (who themselves have to borrow money and repay it) lending money for the schemes, and pledging the credit of the ratepayers for the purpose and for guaranteeing the interest. The Bill was, according to the original view of the Government, going to be non-contentious; but it has proved a very contentious creation. The Government have therefore been following a course of compromise, which is reflected in the differences made in the Bill as it stands now as compared with when it was introduced in the Lords. We suspect that, after the opening of the debate in the Commons on second reading, there was another attempt to appease the new and influential malcontents. The supporters of the Bill outside were kept in a state of anxiety as to what was happening. But nothing was allowed to escape. The Bill was down for the resumption of the debate on Monday of last week—after a full week's interval. Then the "Votes" announced that it would be continued on Tuesday. Tuesday came, but no fresh sign. Wednesday, however, saw the debate concluded, and second reading given to the Bill.

Perturbing Delay.

Parliamentary Control over Expenditure.

That second reading, however, was only given on a promise, on behalf of the Government, by Mr. Neal, the Parliamentary Secretary to the Ministry of Transport. The debate had been continued by Mr. Marriott (Oxford), who holds that private enterprise can best secure electrical development. For the rapid development of the industry, security, freedom, and finance are the requisites. The Bill, in Mr. Marriott's view, gives no evidence that it will accomplish its avowed object of securing a cheap and abundant supply of electricity. The honourable member further asked what possible control was to be exercised by the House over the expenditure under this Bill. Then came Mr. Neal's promise. He intimated that it is the desire of the Government to retain Parliamentary control; and while he is advised this is done by the Bill, he will be prepared to consider in Committee any amendments to secure the reasonable and adequate protection of the control of the House over expenditure by the Electricity Commissioners. In view of this, Mr. Balfour withdrew his amendments. Two notable features about the debate are that so many members who are ordinarily Government supporters were opposed to the Bill, and the other is that the most ineffective speakers were those in favour of the measure. Some of them supported the Bill, because they had been requested to do so by some local body; and the only points in their remarks were those which have been dished-up again and again during this attempt to force upon the country something which even the industry chiefly concerned does not unanimously require. Now the interest will be in the Committee stage, and the condition in which the Bill will emerge from it.

Power to Suspend Purchase Clauses.

Electricity undertakings are largely owned and controlled by local authorities. The fact has not been regarded as an unmixed blessing. It has, indeed, been frequently held that municipal ownership has largely impeded trading progress. On the other hand, there is a time-hardened complaint that, in the case of electric companies, the purchase clause (21 years in the 1882 Act, and prolonged to 42 years in the 1888 Act) has been the means of promoting inanition in electrical enterprise and in preventing the public from providing the necessary capital for development purposes. The evidence of this is obscured by what the companies have done, or at all events the larger ones, in the way of trading enterprise; there may be some amount of truth in it so far as the smaller electrical companies are concerned. However, the "Electrical Review" has recently discovered that there is relief provided in respect of purchase in the Electricity Bill now before Parliament. It is found in section 13. This provides that the Electricity Commissioners may by an Order constituting a joint electricity authority, or a Special Order, suspend, as regards any undertaking or part of an undertaking of any authorized company, any powers of a joint authority, of the

London County Council, or of any local authority, relating to the purchase of such undertaking or part thereof for such a period, and on such conditions (if any), as the Electricity Commissioners may think fit, provided (this is the fly in the ointment) that consent to such suspension has been previously obtained from the authority or authorities in whom the purchase powers are vested. For this purpose the Commissioners may amend the provisions of any Act or Order relating to the undertaking. This power of suspension is accompanied by another change of an interesting, though not obligatory, character. Where there is suspension of the purchase powers, the Commissioners "may" make provision as to the relation between the prices which may be charged for electricity and the dividends to be paid by the Company. The "Electrical Review" states what is obviously correct, that such a postponement of the purchase date would be to many companies a concession of the utmost importance, and would very materially facilitate their finance. Being obvious, we can all agree with the submission. The matter, of course, becomes more important as many undertakings get within measurable distance of their purchase date. Therefore, many companies will welcome the opportunity of getting an extension. The "Review" looks upon the clause as one of the "plums" in the legislative pudding.

Sensitive Electricity Undertakings.

Electricity undertakings appear to jump with remarkable rapidity from a profit-earning state to a condition of heavy deficits. There are two examples before us. A net deficit of £6227 is registered by the Stafford electricity undertaking for the past financial year. Compared with the preceding year, the income from the sales of electricity was £1449 less; and the profit from fittings showed a falling-off of £60. The expenditure, however, was lower by £2604; so that there was an increase of £1095 in gross profit. After debiting £2000 for depreciation, and adding certain small receipts, there remained £4003. The amount of loan and capital charges was £10,230; leaving the net deficit at £6227. The number of units sold was down by 204,900. This is not the real reason for the deficit, seeing that the working expenditure substantially receded. The actual reason is probably that new plant which has, at present prices, cost a considerable sum is only just becoming revenue producing. The same electrical contemporary which furnishes us with the information as to Stafford states that an estimated net surplus of £1000 on the operations of the Nelson Corporation undertaking in the last twelve months has appeared actually as a net deficit of £6000, following on breakdowns, coal troubles, and other matters, over which the department had no control.

Little Revenue Producing Extensions.

Some electricity supply undertakings are constantly making small extensions of cables, &c., at a capital cost which, having regard to interest, sinking fund, upkeep, and depreciation, cannot possibly pay. Expenditure on extensions of this kind accumulates, and must, if unprofitable, be a burden on the remainder of the undertaking. Someone has to pay for any loss. We see that it has been reported to the Dover Corporation that, in order to supply seventy houses to be built at the Rope Walk, it will be necessary to extend the present cable at an "estimated" cost of £1400. The revenue from the seventy houses, it is also computed, would be about £210. This is only a calculation; there is no definite evidence that it will be £210. This sum if obtained (with the revenue from six or seven street lamps) is to cover all the charges for interest, sinking fund, renewals, generation and distribution of the current, and general costs. Does that really look like a piece of profitable business? Then to supply consumers at Lower Road, it is proposed to run a high-tension main at a cost of £825. A report also comes from Chesterfield that the cost of laying mains to Hasland would be £5270, and that the revenue promised, but not guaranteed, would be £670 per annum. We do not think any determination to proceed has been come to in this case. These, however, are the sort of extension schemes over which we are not enamoured, quite apart from any question as to gas and electricity competition. We have seen many illustrations of the same kind; and, after the money is spent, very little is heard as to whether the investments have been actually profitable.

Small Private Electricity Plants.

The managements of those gas undertakings that do business in the installation of private electricity generating stations will be interested to learn that the Electricity Commissioners have resolved not to make regulations as to the type of current, frequency, and pressure, under Section II. of the Electricity Supply Act, 1919, in the case of private generating stations having an installed capacity not exceeding 50 KW. Respecting the establishment of such stations, no notification need be made to the Commissioners.

Electric Kettles.

Electricity undertakings, in view of the high price of the heavier electric goods, and the cost of electrical B.Th.U., are doing their best, or some of them are, with the lighter articles. "Welco Patents" is an enterprising Company. They have sent us a circular-letter about "Welco" goods, as well as a printed folder. We appreciate the little attention. The circular-letter states that electric-kettles substitute the "big line" at this time of the year; and electricity undertakings are told that a large display of "Welco" kettles will mean a considerable business at this season. "Can you," they ask the reader, "supply the right kettle at the right price?" The "right kettle" is apparently the "Welco." We see the prices range from 25s. up to 120s.—the differences in value being apparently in metal and design. It is noticed that the £6 kettle has only a capacity of 2 pints and a loading of 400 watts; and it takes 20 minutes to boil, which means that in this time 133 watts, which is equal to 455 B.Th.U., are used. In other words, starting from cold (assuming 48° Fahr. as the tap temperature) and reaching boiling-point, this kettle—boasting the name of "Monarch"—is supposed to have about, perhaps rather in excess of, 100 p.ct. efficiency! Of course, knowing something of heat and heat losses, we really cannot bring ourselves readily to swallow this. Some of the cheaper kettles have larger capacities and greater loadings. It is seen, for example, that the "Victor," in one of its sizes, has a capacity of 4 pints, and a loading of 700 to 800 watts. The price of this is 35s. To raise 4 pints of water from 48° to 212° would, without any loss, require 820 B.Th.U. Supposing the kettle has an efficiency of 60 p.ct., 1366 B.Th.U. would be required, or (say) 422 watts. With a loading of 800 watts, this would mean that the 4 pints of water would require half-an-hour to reach boiling-point. Let us take the "Triumph," boiling 2½ pints of water, with a consumption per hour of in one case 1000 watts, and in another case 600 watts. It is stated that this will boil in ten to fifteen minutes. At 60 p.ct. efficiency, the quantity of water named would need (say) 853 B.Th.U., or approximately 270 watts. The 2½ pints would boil in about fifteen minutes with a consumption at the rate of 1000 watts per hour, but not at 600 watts. That is perfectly clear. If the "Triumph" with a loading of 1000 watts takes fifteen minutes to boil 2½ pints of water, then there is something strange in the "Monarch," with a consumption of 400 watts per hour, boiling 2 pints of water in twenty minutes! This method of boiling water at power rates is not cheap; where there is connection of the kettle to the lighting circuit, the cost is anything but a negligible quantity.

The Bread Consumer Pays.

We have heard a lot about the shrinkage of meat by the gas way of cooking it compared with the electrical way, despite the meat being of similar constitution and temperatures harmonizing. Now apparently we are going to hear the same thing regarding bread. Any sophism, providing it is against gas and favourable to electricity, appears to be welcomed with the greatest of heartiness by some electrical men. "Electrical Industries" tells of how the Westinghouse Company of America have developed two types of ovens to a stage at which it is claimed there is absolute certainty as to the uniformity and quality of the product, as well as a distinct saving in labour, time, and material. In one of the ovens, the bread moves in a circle; and this oven, loaded to 25 KW., has a power consumption, including radiation losses, of 100 watts (or 340 B.Th.U.) per pound of bread—the power consumption in baking 150 ½-lb. loaves being 21·5 KW.-hours. That is 75 lbs. of bread. The 100 watts per pound do not appear to be confirmed by the figures. However, the other oven is of the continuous conveyor type, and takes 80 watts per pound of bread. It has been found, so it is said, that the electrically baked loaf keeps fresh much longer than a loaf baked in other ovens. If it does, then it must contain a larger amount of moisture. The information proceeds:

> In a large Cleveland bakery, two electric-ovens replaced gas-heated ovens; and although the gas bill (natural gas at 30 c. per 1000 c.ft.) had been only $6 per day, and the electricity bill (at 2.38 c. per KW. hour) was $36 per day, the improvement in the product off-set the difference between the bills. In the course of time, however, the users made the same discovery as Mr. A. F. Berry did in regard to meat. They found (after several months' operation) that less flour was needed to produce loaves of a certain weight. Each barrel of flour actually produced ten additional loaves of 1½ lb. each, giving an additional revenue of $62.70 per day on the average consumption of 57 barrels per day. This saving extinguishes the factor of higher electrical cost, which is itself due, we may point out, to the high price of electricity and the low price of gas. The gas contained about 1000 B.Th.U. per cubic foot.

A barrel of flour can only contain a certain weight. Therefore the extra weight must come from an outside source. For argument, electricians are greatly indebted to water. They show now that the eater of bread electrically baked pays bread prices for an excess of moisture.

London and Southern District Junior Gas Association.—A day full of pleasure and interest is promised for the members of the Association and ladies who take part in the summer outing meeting at Brighton on Saturday, June 17. Those arriving at Brighton by train will be conveyed in motor coaches provided by the Brighton and Hove General Gas Company to the Royal Pavilion, to which place members travelling by their own coaches or cars should proceed direct. There is to be luncheon with the Chairman (Mr. A. M. Paddon), the Directors, and the Engineer and General Manager (Mr. C. H. Rutter) of the Company, in the Banqueting Room of the Royal Pavilion at 12.30, to be followed by a visit to the Portslade works of the Company, where afternoon tea will be served. Ladies are specially invited to accompany members upon this occasion.

LOW-TEMPERATURE CARBONIZATION.*

The Work at the Fuel Research Station.

We have received a copy of the second section of the Fuel Research Board's report on Low-Temperature Carbonization. It makes an interesting volume; and, as a technical contribution to the subject, it will long stand as a work not only of reference, but of considerable value to the student of carbonization. The text of the report (signed by Sir George Beilby) occupies forty pages. There follow fifteen pages of tabular matter, a couple of pages of graphs, and then some excellent photo-micrographs. The first two are by Wilh. Thorner, taken in 1886—one showing the structure of gas coke; and the other of metallurgical coke. The next productions are by Sir George; and they were taken this year. They show: (1) Gas coke from horizontal retorts using Durham coal; (2) blast-furnace coke from recovery ovens; (3) laboratory assay coke; (4) a gas-coke from vertical retorts; (5) laboratory assay coke; and (6) coke resulting from the carbonization of a briquette. There is an enlargement of the micrograph, showing the coke from Arley coal carbonized in the vertical retorts, with steaming. In this we can follow the continuity of the bubble sponge structure from cells 1 mm. down to 0·05 mm. diameter. The succeeding plates are equally interesting. Accompanying the text there are also four sheets of drawings illustrating the experimental plant with which the work on low-temperature carbonization has been conducted at the Fuel Research Station.

Speculative Elements.

Lightly surveying the text, it is seen that the report calls attention to the fact that, as a possible source of home supplies of fuel oil for the Admiralty and for the mercantile marine, low-temperature carbonization of bituminous coal continues to be a problem of national importance, though this importance recedes somewhat from view in these days of plentiful supplies and lower prices. But other times have also to be considered when it is inconvenient to have to depend upon overseas sources. During the past eighteen months, the price of fuel oil has fallen from upwards of £15 per ton to from £3 to £4. The bearing of this fall in price upon schemes of low-temperature carbonization of coal will be at once appreciated, when it is realized that it represents a drop of at least 10s. on the value of the fuel oil obtainable, by carbonization, from a ton of coal. There has been a fall in the price of coal; but the absence of control over prices introduces a speculative element which cannot be ignored in the consideration of schemes for the production of fuel oils from home sources. It is perhaps fortunate for low-temperature processes that fuel oil is only one of the three principal products of carbonization—gas, oils, and coke. Coke is by far the most important, representing 70 p.ct. of the weight of the coal carbonized. Here again the profitable working of the process must largely depend upon the recognition by consumers of the superiority of smokeless fuel to coal. We agree with all this, and the other points in the report bearing upon the subject. It is also submitted that there is a consensus of opinion among those who have used coke produced at a temperature of about 600° C., that it is an admirable domestic fuel. This we have never disputed, provided it is coke that will stand transport; but we doubt whether, generally speaking, householders will be prepared to pay a price for it much in excess of that for coal. That is another unknown factor in the situation.

Low-Temperature Gas as a Town Gas Enricher.

We see in the report a distinct tendency to the view that the rich gas of low-temperature carbonization could be utilized for enrichment purposes by gas undertakings. This is discussed at some length. Introduction to the idea is obtained in the sentence: "The rich hydrocarbon gas of the low-temperature carbonization will establish a link between the old and the new industries, the importance of which has not yet been realized." The report does not suggest that low-temperature carbonization is likely to supersede gas-works practice of carbonization and gasification; it goes no further than the view that the rich gas of the former would find a natural outlet as an enriching agent on gas-works. The report points to the limit placed by town-gas distribution systems upon the downward movement of calorific value per cubic foot; but this limitation with auxiliary boosting is not so restricted as some people appear to think. Carburetted water gas is at present the most available method of enrichment; but even if supplies of gas oil for this purpose at pre-war prices can be depended upon, the cost per therm will be 4d. to 6d. Carburetted water gas of 500 B.Th.U. would, it is pointed out, require the use of a relatively large proportion to raise the calorific value of the retort gas by a very moderate amount. The calorific value of the low-temperature gas is about 1000 B.Th.U. per cubic foot, so that the addition of only 5 p.ct. to gas of 450 B.Th.U. would raise its value to 477·5 B.Th.U. The report says the intrinsic value of the gas for enrichment purposes is unique. The potential value of gas obtained from coal carbonized at 600° C. may be taken as 30 therms, which, at the very moderate price of 4d. per therm, would realize 10s. per ton of coal carbonized. "As the value of the gas for enriching purposes becomes generally realized, this product will take its place as one of the most valuable, and at the same time the least speculative, of the assets of low-temperature carbonization."

Will Low-Temperature Carbonization Pay?—A Conditional "Yes."

We should like here to quote *in extenso* a paragraph from the report:

> The rapidly varying prices of coal and its products render estimates of profit and loss based on current prices of to-day more or less speculative. We believe, however, that it may be assumed that the price obtained for the coke as a high-class domestic fuel will be sufficient to meet the entire cost of the coal used in its production, that the crude oils (amounting, say, to 14·5 gallons) can be sold at an overhead price of 5d. per gallon, and the gas at 4d. per therm. The two latter products would then realize respectively 6s. and 10s. per ton of coal carbonized, or unitedly 16s. per ton, with which to meet the costs and charges of manufacture other than the outlay on coal, and to provide a profit. These figures are based on certain straightforward assumptions which are perfectly open to re-examination at any time. They are cited here mainly to give some indication of the margins on which this industry would have to be run, and to show the extent to which the working margin of profits must depend on the evolution of an apparatus which can be cheaply erected, worked, and maintained, and from which the yields and the qualities of the products conform to the standards which have been reached in the experimental work at the Fuel Research Station.

The report contains trustworthy data on the subject of low-temperature carbonizing results, which will serve to correct some of the loose and unsupported statements that have been handed on from time to time without corroboration. With the knowledge gained, and an examination with other pioneering work, the report sets out in italics this question: "Will it be possible to establish on sound industrial lines a new industry based on the carbonization of the tens of millions of tons of coal per annum which are being consumed in the raw state?" It is admitted that a final answer cannot be given; but there is optimism in this: The patient work of the past few years has brought the answer almost within our reach. "There appear to us to be some grounds for the expectation that it will be a conditional 'Yes;' the elements of uncertainty being mainly economic and social."

Effect of Radiant Heat on Thin Layers.

There is a brief review of work done by others prior to the investigations at the Fuel Research Station. A section follows dealing with the Board's experimental researches on carbonization. The part treating of the micro-structure of coke is instructive. A chapter deals with the correlation of experimental work in the laboratory and works; and there is a description of the setting of horizontal steel retorts erected at the station, and which was used in the first low-temperature experiments. Surveyed are the single-tray experiments with various types of coal; and then the influence of the speed of carbonization on thin layers is discussed. In this connection, we read that it is a striking illustration of the importance of the "time element" in carbonization that the carbonization of 20 grammes of finely-ground coal in the laboratory assay apparatus is not completed until a temperature of 600° C. has been maintained for at least twenty minutes. The ratio of surface to mass in this case is very great, as compared with that existing in a 3-in. layer in a carbonizing tray. These considerations led to the abandonment of any attempts to devise a method of carbonizing coal in really thin layers. The "time element" in the operation absolutely rules out this method, which, from the point of view of conductivity, has much to be said for it. A further reason for this abandonment was the discovery of the effects of radiant heat at 600° C. on the surface layers of finely-crushed coal on the retort trays. In the first trays of coal carbonized, it was noticed that carbonization of the surface layers had occurred so rapidly that little or no general fusion had taken place, and the surface layer consisted of completely detached, or only slightly cohering coked granules. The "time element" had been so reduced that the beneficial effect of fusion on the structure of the upper layers had been cancelled. This effect, it was found, could be obviated by placing a steel plate on the upper surface of the coal; thus restricting the free play of the radiant heat among the particles. This, however, was a complication. When a 3-in. layer of coal was adopted divided into 3-in. square cells, the radiation effect on the structure of the coke was practically negligible. But the objection to the radiation effect will not hold good when the resulting coke can be used either in the form of powder or after briquetting. In the trays charged with 2 or 3 in. layers of crushed coal, the more complete fusion on the bottom and sides showed the important part played by heat conducted through the metal. The experiments indicate the advantages of greater density of finely-divided material, which adds to the weight of coal with an improved thermal conductivity.

Succeeding is a summary of carbonizing tests with definite coals and blends of these prepared by Engineer-Commander J. Fraser Shaw, R.N., and Mr. King. The results throw new light on the problem of low-temperature carbonization, and supply fundamental data which have hitherto been lacking. The importance upon coke structure of blending different coals and pre-briquetting is demonstrated.

Behaviour of Steel in the Moving Parts of an Automatic Carbonizing Machine.

The report is an excellent review of the work done and the valuable results achieved; and it should be studied from beginning to end by everyone interested in carbonization, and the

* "Report of the Fuel Research Board on Low-Temperature Carbonization (Second Section)." London: H.M. Stationery Office, Imperial House, Kingsway, W.C. 2. Price 2s. net.

questions of gas and fuel supply for general consumption. Before closing this notice of the contents, we should like to quote two or three points from the conclusions. The investigations have demonstrated that metal retorts, if suitably designed, constructed, and heated, can safely be used for carbonization at 600° C., or even higher. The retorts which have been in use at the station for nearly two years show no signs of distortion or depreciation; and this experience led to the hope that the behaviour of steel in the moving parts of an automatic carbonizing machine would be equally satisfactory. Unfortunately this hope has not altogether been realized. In July, 1920, a carbonizing machine was devised in which the coal trays are superimposed on shelves in an elevator which can be moved vertically in a gas-tight carbonizing chamber, so that each tray in turn is brought opposite to an opening into a gas-tight chamber outside the brickwork of the setting. By suitable appliances, the tray is drawn through this outside chamber, and the coke cakes are discharged into a cooling chamber; the tray being charged with fresh coal as it is returned to its shelf in the elevator. The machine has been at work during the last nine months, and a considerable quantity of thoroughly satisfactory coke cakes has been produced. The superposition of the trays has necessarily reduced the direct radiation which reaches the layer of coal in the tray, and more dependence has to be placed on the conduction of heat through the metal work of the shelves and trays. This has increased the period of carbonization to about four hours, as compared with about three hours in the horizontal retorts. The serious difficulties encountered have been due to the loss of rigidity which occurs in steel at a temperature of 600° C. By direct measurement, it has been ascertained that slight creeping occurs in the mechanically moving parts which are maintained at this temperature under so moderate a stress as 1 ton per square inch. This obviously adds seriously to the difficulty of working any automatic machine in which a series of accurately timed steps must be linked-up mechanically. In the machine as erected, each step in itself has proved to be perfectly feasible; but the proper sequence of these steps still involves an amount of intelligent control which is incompatible with the efficiency of the apparatus as a labour-saving machine. The experience with the machine, though in some respects disappointing, has opened-up certain possibilities which are now being developed.

Coke Structure and "Blending" and Pre-Briquetting.

Reference is also made in the conclusions to the use of the low-temperature gas for enriching lower grade gas, "which is likely to establish a link between the gas industry and low-temperature carbonization." The study of the structure of coke and of the influence on the structure of "blending" and "pre-briquetting" has, it is remarked, thrown new light on the origin and control of structure which is likely to lead to practical developments of great importance, and to the establishment of a link between low-temperature carbonization and the coking and metallurgical industries. The work now in hand at the station includes the development of automatic methods of carbonization, the study of briquetting as a preliminary to carbonization, and the development of a practical method of briquetting at or near the fusing-point of the coal.

Gas and Housing Schemes.—Through pressure on our space this week we have to postpone the publication of the address, at the half-yearly meeting of the North of England Gas Managers' Association, of Mr. W. E. Oulds, of the Tynemouth Gas Company, on "Gas as it Affects the Housing Schemes."

Waverley Association of Gas Managers.—As already intimated, the annual meeting of the Association is to be held in the Technical College, Galashiels, on Thursday of next week, June 8, when the President (Mr. A. Dow) will take the chair at 11 o'clock, and after the transaction of formal business will deliver his address. Luncheon in the Masonic Hall, on the invitation of the Directors of the Galashiels Gas Light Company, will be followed by an inspection of the gas-works. Later the members will return to the Masonic Hall for tea, as the guests of the Company. The Hon. Secretary (Mr. R. J. Philp) adds that a char-a-banc has been provisionally reserved for members who intend participating in the Hawick Common Riding ceremonies the following day.

Gas in the Printing Industry.—The use of gas for fuel in a newspaper office is described in No. 99 of "A Thousand-and-One Uses of Gas" issued by the British Commercial Gas Association. There are to be found in this issue an account of the processes of type-setting, preparation, drying, &c., of photographs and zinc plates, the making of the matrices for the stereo plates, the melting of the stereo metal, and the casting of the plates. In connection with all these processes, gas is advantageously employed. There are reproduced a number of photographs taken in well-known printing works, which illustrate the ways in which gas is employed. One of the pictures is of a gas-heated revolving matrix dryer for taking the surplus moisture from two full-sized matrices in one operation. The waste heat from the revolving portion of the machine passes upwards through shelves above, which are used for drying and warming the matrices prior to use. For use in the stereotyping room, in particular, gas can claim a large number of advantages; and these are set out in detail in the article. A careful consideration of them by practical printers who have not yet such apparatus installed, should lead to increased business for gas undertakings.

MANCHESTER DISTRICT INSTITUTION OF GAS ENGINEERS.

Visit to the Low-Temperature Carbonization Works at Barugh, and the Coke-Ovens and Bye-Products Works of the Old Silkstone Colliery Company.

Members of the Manchester District Institution of Gas Engineers held a formal meeting at Barnsley on Friday last, with Mr. Harold Davies (the President) in the chair. The chief purpose, however, of meeting at Barnsley was to take the opportunity of visiting the low-temperature carbonizing works at Barugh (one of the country districts near Barnsley), and afterwards to see the coke-ovens and bye-products works of the Old Silkstone Colliery Company.

The Works.

The visit to the Coalite works was full of interest. The designers and managers of the works at Barugh do not claim perfection in method as yet, nor full success in their operations; they justly say they are experimenting. They have had disappointments, as every pioneer in an industry must expect; but they declare the results up to date give confidence as to the future. Only nine months have passed since they began their work, and they say that they should be allowed a full year of experiment before any critic pronounces judgment upon them. The works, simple in construction, have already been described and commented upon in our columns.

The visitors were welcomed by Captain Abbott (one of the Directors of the Company); Mr. T. M. Davidson, in charge of the Technical Department, and designer of the plant; and Mr. J. B. Powell, Works Manager. Major Hamilton, M.P., the Chairman of the Construction Company, and Sir Henry Goold-Adams, K.C.M.G., Chairman of the Low-Temperature Carbonizing Company, were unavoidably absent.

Captain Abbott, on behalf of the Directors, gave the visitors a cordial welcome. He said he had not been associated with the works as long as some of his colleagues on the Board; but, nevertheless, he had had a most interesting experience. His period of service had been full of interest. Trials and disappointments they had had; but such things were to be expected before carrying their work to a successful issue. He wished to say that this particular process was not in any way in opposition to the gas industry or the metallurgical coke industry. Rather was it an adjunct to those industries, and one which might be worked in conjunction with any other processes dealing with coal.

Mr. Davidson, with the aid of a diagram of the retort-house, explained the process of making coalite. He showed how the slack coal was dropped into the hopper, passed into the retorts, and finally found its way to the cooling chambers, and in due time was transferred to the railway wagons. He joined with Capt. Abbott in disclaiming any opposition to the gas or metallurgical coke industries. The gas industry and this new industry were closely allied; and the alliance should bring blessings to both of them. In that direction he thought there were great possibilities. He believed the day would come when, far from being in opposition to the gas industry, the coalite industry would form an adjunct to it, and when gas-works in any country would have a low-temperature carbonizing plant attached to them, because the rich gas which came from the coalite process as a bye-product would be found useful as an enriching agent for the gas made in the usual way. They thought their rich gas would be worth money to gas engineers, and that they would be glad to take it. He hoped they would. The Company had been at work nine months. They desired, however, to go on for twelve months before they could say definitely that their process was that which they believed it to be. So far, however, they were encouraged. They were getting experience, and they had no reason to doubt the ultimate issue. Mr. Davidson explained that the retorts now at work were not so large as those which would be used ultimately; but they embodied every detail of the design. The coal being carbonized consisted of 70 p.ct. of Silkstone and 30 p.ct. of Derbyshire.

The President expressed the thanks of the assemblage for their courteous reception and the explanations given them.

The visitors were then at liberty to inspect the works. At the end of their inspection, they saw one of the retorts give forth its coalite. It was said that one ton of coal produced 4500 c.ft. of gas, 72 p.ct. of coalite, and 18 p.ct. of tar oils.

Coke-Oven and Chemical Works.

Leaving the low-temperature carbonizing works, the visitors passed on to the neighbouring coke-oven and chemical works of the Old Silkstone Collieries, Ltd., where they were very cordially received by Major Middleton and other Directors and officials of the Company.

It was pointed out that there were 80 ovens at work, in two batteries of 40 each. These ovens were of the most modern type. They were fed with coal from the Company's various collieries, which are within a radius of two miles. The present output of coke was about 2400 tons per week. It was metallurgical coke for foundry and furnace purposes. There was a ready market for it, and it was of a very high quality. The tar was passed on to the adjacent chemical works, where it was distilled. The surplus gas, amounting to over two million c.ft. per day, was

passed over to the Yorkshire Electric Power Company's generating station, near to the coke-oven and chemical works, and was used by them for the heating of boilers employed in driving steam-turbines for generating electricity. At the works 6000 gallons of motor spirit were produced every week, 45 tons of neutral sulphate of ammonia, and 150 tons of crude tar.

Luncheon.

At the conclusion of the visit to the coke-oven and chemical works at Barugh, the members returned to Barnsley, and were the guests of the Old Silkstone Collieries, Ltd., at luncheon, at which Major Middleton presided.

The Chairman, replying to a vote of thanks proposed by the President of the Institution, spoke of the last visit of the Institution to Barugh. It was, he said, in November, 1913. Many things had happened since then. Many old faces had passed away, and new ones had come to the front. Great difficulties had been faced by the gas and coal industries during those intervening years. There was trouble for the coal industry when Government control was on. When the control passed, they had to suffer a three months' strike. Their resources had been taxed to the uttermost limits in the past few years. All the same, he congratulated the gas industry on the wonderful way in which it had recovered from the disastrous strike of last year.

New Members.

The following new members were introduced: Mr. Frederick A' Pye, Chester; Mr. Herbert William Kay, Earby and Thornton; Mr. Alfred L. Holton, Bradford Road, Manchester; Mr. James Wilson Beveridge, Pontefract; Mr. Charles Edwin Dickinson, Widnes; and Mr. John Tattersall Haynes, Bolton.

A word of praise is due to Mr. Harold Hutchinson, of Barnsley, for the way in which he acted as guide to the visitors.

MESSRS. WILLEY AND CO.'S NEW WORKS.

Opening at Manchester.

Messrs. Willey and Co., Ltd., the well-known meter manufacturers, of Exeter (with branch works at Leicester and in London), opened, on Thursday last, new works in Manchester. Messrs. Willey have had manufacturing and repairing premises of their own in Manchester for several years; but the growing needs of their business compelled them some time ago to look out for a building larger and more conveniently situated than the old one.

In their search for a new site, they found one at the junction of Saville Street, Hesketh Street, and Sorton Street, near to Oxford Road—one of the city's main arteries. The site is well placed for business purposes; being near to the centre of the city, the railway stations, and the gas-meter testing-station. Here a new building, three storeys high, has been erected, from the designs of Messrs. T. Cook and Sons, architects, of Manchester. The lowest floor, or basement, is at present a store-room; but it is so light and dry that it may well be used as a workroom. The offices on the ground floor are entered from Saville Street. At the other end of the building there are the best modern appliances for receiving and dispatching goods. There is also a hydraulic lift available for all the floors.

For the opening ceremony, a goodly company of men interested in the meter industry assembled, and were shown over the building by Mr. F. Templer Depree, J.P. (Chairman of the Company), Mr. T. Glanfield (a Director), the Architect (Mr. T. Cook), and Mr. John H. Roby, Messrs. Willey's representative in Manchester. Alderman William Kay, J.P., Deputy-Mayor of the city and Chairman of the Gas Committee of the Manchester Corporation, had been expected to take the leading part in the formal opening of the new building; but important public business kept him in London. In Mr. Kay's absence, the task of opening fell upon Mr. H. N. Barrow (Chairman of the Manchester Meter-Testing Station Committee). Speech-making was reserved for a later period.

The Luncheon.

Luncheon was served at the Midland Hotel, under the presidency of Mr. F. Templer Depree. The company included Mr. T. Glanfield, Mr. H. N. Barrow, Alderman Cook, Mr. S. Meunier, Mr. R. H. Brown, Mr. J. H. Roby, Mr. J. E. Cowcill, Mr. J. R. Hill, Mr. G. W. Tooley, Mr. F. Birtles, Mr. S. Dyson, Mr. H. Gollings, Mr. Godfrey Kaye, Mr. Thornton Willey, Mr. F. A. Woolcott, and Mr. G. Lane.

The Chairman, proposing "Prosperity to the City of Manchester," regretted the absence of Alderman Kay, and recalled his happy remembrances of Manchester and Alderman Kay, ten years ago, when the first conference of the British Commercial Gas Association was held in the city, with the late Sir Corbet Woodall in the chair. He was very much impressed at the time with what he saw at the gas-meter testing-station, and, contrasting it with other testing-stations, came to the conclusion that Manchester took precedence over the whole lot. He was impressed, also, with the volume of trade and commerce in Manchester; and it occurred to him that if there was so much work being done, his firm might have a share in it. He thought it would be good to have a manufactory for meters in Manchester, and thereby assist his firm in ministering to the wants of the community in this respect. As to the future, his feeling was that the gas industry was going to be one of the best in the land. The industry had had its struggles; but it must be gratifying to the people engaged in it to see how fast it was recovering from the ills it suffered during the war. Labour troubles continued; but he hoped a remedy would soon be found. If employers and employed would use a little commonsense, many of their disputes would be adjusted speedily.

Mr. Barrow, responding, said the efforts of the City Justices at the meter-testing station were not to obstruct in any way, but simply to see that the public got value for their money. All that gas engineers were out for was to have a meter which would give a correct record of consumption, and the authorities of the city were desirous of working hand in hand with gas engineers and meter manufacturers—realizing, as they did, the importance of the industry. Manchester held the third position in the country as a gas user. Its yearly consumption was 6000 million c ft.; and the number of meters in use within six miles of the city centre was 450,000. The extent to which slot-meters were installed might be guessed from the fact that 6000 tons of pennies were collected from them in one year.

Mr. Glanfield proposed "Our Guests," coupled with the name of Mr. S. Meunier, of Stockport.

Mr. Meunier said that, in coming to Manchester, Messrs. Willey were coming to a place where the competition was particularly keen, but where there was a disposition to help others as well as one's self. There was a brighter future for the gas industry to-day than ever before.

Mr. John H. Roby proposed the health of the Architects and Contractors, in a neat little speech; and Mr. Cook responded.

Mr. R. H. Brown (Birkenhead) joined Mr. Hill (Manchester) in proposing the health of the Chairman; and with the Chairman's brief but cordial acknowledgment of the compliment, and a few words from Mr. Willey—a grandson of the founder of the firm—the proceedings ended.

From the hotel, most of the company took the opportunity of going to the gas-meter testing-station, and seeing what is being done there.

The Firm of Willey & Co.

As long as one can recollect almost, the name of Willey has been associated with gas engineering, especially in the West and South-West of England. The firm of Willey & Co. was started in the early sixties by the late Mr. Henry F. Willey, who was for many years with Mr. John Vicary, a meter maker and gas engineer, carrying on business in Exeter. Mr. Willey left Mr. Vicary and founded the firm of Willey & Co. On the death of Mr. Henry F. Willey, the business passed into the hands of his son, Mr. H. A. Willey, who died in 1904, having turned the business into a limited company in that year, from which date it has been carried on up to the present time. The late Mr. H. A. Willey was practically one of the pioneers of the installation system for supplying gas lighting and cooking by means of the slot-meter, and before his death fixed up numerous important contracts with the principal London and provincial gas companies, by whom many thousands of the Company's meters and installations are now in use.

The original works of the firm were situated in Commercial Road, Exeter. Very considerable extensions were found necessary, owing to the very large contracts which were being received. Then new works and offices were designed and erected in Haven Road, and the old establishment dismantled. In a period of about five years, what had been meadow land was covered with up-to-date buildings fitted with modern machinery, giving employment to between 600 and 700 skilled mechanics and labourers. The works at Exeter are entirely self-productive—that is to say, everything is made on the premises from the raw material. Constructional ironwork of all kinds is turned out, gasholders, purifiers, condensers, scrubbers, &c., gas-meters, brass fittings, and all the requirements for a modern gas-works, as well as the plant necessary for the best installations of gas supply for lighting, heating, cooking, or motive power.

The business of the firm has increased very extensively during recent years, and Messrs. Willey & Co. have built large meter factories in London and Leicester. The further expansion of their business has necessitated the new premises at Manchester to cope with their ever-increasing trade among gas companies in the North of England and Scotland.

Irish Association of Gas Managers.—Mr. George Airth, of Dundalk (the Hon. Secretary), intimates that there will be no annual meeting of the Association this year. The proportion of members voting against the holding of a meeting was 68 p.ct. of the total sent in.

Rapid Price Changes in Germany.—"An increase in coal prices on March 1 was followed by an increase in wage rates on March 7, antedated to Feb. 1. On April 1 there was a further rise in coal prices, and an increase in officials' salaries. April 14 brought a further rise in wages, and May 1 yet another. While on the latter date a further increase in coal prices and a rise in railway freights had to be contended with." Such, according to "Das Gas- und Wasserfach," are some of the difficulties with which the Berlin Gas-Works, like most others in Germany, are faced in trying to fix gas prices and keep pace with their manufacturing costs. Especially is it a serious matter for municipal works, where the formalities of having a price increase sanctioned by the local authority often delay such increase until several further ones have become necessary. In the case of Berlin, this has been at any rate partially remedied by an increase in gas prices on a fixed scale being allowed automatically to follow increases in the cost of coal. A monthly average for the latter has to be agreed between the gas-works management and a Committee appointed by the local authority.

SOUTHERN ASSOCIATION OF GAS ENGINEERS AND MANAGERS.

A Hearty Welcome to the Isle of Thanet.

The Members of the Association and their ladies were favoured last Friday, the 26th inst., with brilliant weather for their visit to Margate, the home of the President (Mr. J. M. CAMPBELL, the Engineer and General Manager of the Isle of Thanet Gas Light and Coke Company), where they were entertained with the greatest hospitality by the Chairman and Directors. The Mayor and Corporation, too, offered every facility for their enjoyment. All present sincerely regretted the absence of Mr. W. H. BENNETT (the Secretary of the Association) which was enforced by illness.

About fifty members of the Association had travelled to Margate overnight; some to attend the May meeting of the Eastern District, at which all members from the West were welcome. The last-comers from London were met at Margate West by Mr. and Mrs. Campbell, and proceeded to the works, where light refreshments were provided. The muster was notable for its numbers and the fact that no fewer than nine Past-Presidents of the Association were there—Mr. Frank Livesey, of Maidstone, Mr. F. W. Cross, of Lea Bridge, Mr. W. B. Farquhar, of Ilford, Mr. D. H. Helps, of Reading, Mr. H. C. Head, of Winchester, Mr. A. E. Broadberry, of Tottenham, Mr. W. Doig Gibb, Mr. C. F. Botley, of Hastings, and Mr. J. Wesley Whimster, of Bath. The Chairman of the Company (Mr. Walter Hills) and Mrs. Hills were indefatigable in welcoming the visitors. The tour of the works was undertaken with the help of a descriptive brochure and the able guidance of Mr. Campbell, Mr. W. J. Baker (his Assistant), and Mr. B. M. Wells (the Junior Assistant). Mr. Stickels (the Secretary) had rendered great help with the arrangements for the visit.

THE GAS-WORKS.

The Isle of Thanet Gas Light and Coke Company is very old-established, having obtained its first Act of Parliament in 1824, when statutory powers were secured to supply gas to Margate, Ramsgate, Broadstairs, and places adjacent. The power to supply Broadstairs was not exercised, and a Private Company now exists for the purpose. Works were established at Margate and Ramsgate, and gas was supplied to both towns by the Company until 1877, when the Ramsgate Corporation obtained Parliamentary powers to acquire that portion of the Company's undertaking lying within their prescribed area, which led to a severance of the then property into two portions of equal value, leaving Margate and district only as the Company's sphere of operations. It is interesting to note that at the time of the separation the Company's make of gas for the two towns was about 118 million c.ft., dropping to 55 millions (for Margate only) the first year thereafter, whereas in 1921 the Company's make reached fully 406 millions (corrected), compared with about 620 million c.ft. if the quantity made by the Ramsgate Corporation is added.

The consumers numbered 8154 last year, of which about 60 p.ct. were supplied through prepayment meters; while there were fully 6000 cooking stoves and almost 2000 gas heating appliances on hire in 1921. Consumers' burners are periodically maintained on advantageous terms.

Prior to the war the price of gas was the lowest in Kent, being only 2s. 4d. per 1000 c.ft. to ordinary consumers. Owing to the difficulties experienced during the war, from which they have not yet wholly recovered, the charge now being made is 13·2d. per therm with gas of 460 B.Th.U. gross.

The maximum day's make occurs in the height of the summer season, and has reached (in August) close on 1,600,000 c.ft. There is another heavy daily load at Christmas, which amounted to 1,433,000 last year. During the season, the output of gas between 6 a.m. and 6 p.m. represents 70 p.ct. of the day's total, and between mid-day and 1 p.m. fully 13 p.ct. of that total is consumed.

The works are located on both sides of Addington Street, right in the heart of the town, occupying an area of only three acres. Additional land for manufacturing and storage purposes was secured, under the Company's Act of 1914, to the extent of 7½ acres at St. Peter's, some two miles from the existing works and within the area of the Broadstairs and St. Peter's Urban District Council.

Coals.—The coals (amounting to nearly 30,000 tons) required for carbonization are brought partly by rail to Margate Station, and partly by steamers or barges to Margate Harbour; thence to the works by motor lorry under contract. They are unloaded at the harbour by means of a 5-ton Priestman travelling steam crane and Hone's grab of about 15 cwt. capacity. At the works the coals are passed through breakers and delivered into one of two stores; thence they are raised by bucket elevators (1) to continuous cotton belt conveyors, each 200 ft. long with tippers, or (2) into a 50-ton feeding hopper to supply the Babcock and Wilcox gravity bucket elevator, discharging into storage hoppers on top of the vertical retort bench, or (3) similarly elevated to the drag-bar conveyor supplying the storage hoppers over the inclined retort bench. Coals are taken from both stores by means of 24-in. Zimmer tray conveyors under the floors *en route* to the bucket elevators. The entire coal-handling machinery is driven by a 10-H.P. Crossley gas-engine in one house and a 20-H.P. Tangye horizontal steam-engine in another, as well as duplicate 10-H.P. Hindley steam-engines operating (interchangeably) the gravity bucket elevator to the vertical retort installation and the coke lift. It is proposed in the near future to enlarge No. 1 store and equip it with continuous band and Zimmer conveyors, similar to those existing and acting in conjunction with them, and probably electrically-controlled throughout.

Carbonizing Plant.—The carbonizing department consists primarily of five settings of four Woodall-Duckham continuous vertical retorts, 25 ft. long and tapering from 3 ft. 10½ in. by 7 in. at the top to 5 ft. 3 in. by 17 in. at the bottom, with their earlier arrangement of regenerators, producers, gas offtakes, seal pots, tar overflows, &c., complete. Three of these five settings are now under process of entire reconstruction on the Woodall-Duckham latest system, with steaming facilities. In another house are eight settings of eight inclined ⌂ retorts, 20 ft. long on the slope and measuring 23½ in. by 15 in. (to 20 in. by 15 in.), and set at 32 degrees, with Drake's patent tube regenerator furnaces. These latter are worked with heavy charges on 8-hour periods.

Coke.—The coke from the vertical installation is discharged into skips, which by means of the mechanically-controlled lift are raised and tipped into the coke-hoppers on top of the bench for producer-feeding, or wheeled out and deposited in the yard. The coke from the inclined retorts drops through the drawing-floor into side-tipping skips, which are run outside the house on rails where the coke is quenched and discharged alongside. Machinery was previously installed for elevating this latter coke to a drag-bar conveyor running over the hoppers still in the yard, but which has been dismantled. It is intended at an early date to instal a telpher plant to deal with the coke from both installations; and the existing hoppers will be taken down and re-erected at a more convenient place in the yard and equipped with screening plant of a suitable character.

Condensation.—The gas is cooled by means of two sets of Clapham's "Eclipse" water-cooled condensers, each consisting of three towers, 6 ft. 6 in. by 6 ft. 3 in. by 21 ft. high over-all, with 24-in. connections, and nominally sufficient to deal with a winter make of two million c.ft. per day. It is to be noted that the summer temperature of the gas from the vertical retorts is 180° Fahr. maximum on entering the first set of condensers, so that both sets are required (at the time of the heavier make) to maintain an outlet temperature of 60° Fahr. maximum.

Exhauster House.—There are two 65,000 c.ft. per hour Donkin exhausters, with 18-in. connections and 6-H.P. horizontal steam-engines on combined beds, worked alternate weeks. The exhauster house is provided with polished pitch-pine beams and match-boarded ceiling, with the stoker's mess-room, fitted with baths, drying-room, &c., overhead. A "Sarco" recording calorimeter connected to the exhauster outlet is installed in this house, and is fitted underneath with miniature scrubber and purifier, as well as a cooler. A Simmance-Abady calorimeter adjoins for purposes of daily calibration.

Compressing Plant.—A high-pressure gas compressing set in duplicate is accommodated in a room communicating with the exhauster house, has a capacity of 2000 c.ft. per hour, and is of the Keith-Blackman type with National gas-engines direct-coupled on combined bedplates and foundations, and with two 4-in. high-pressure Mannesmann outlet mains to the town, in opposite directions.

Washer-Scrubbers.—The gas passes through two Holmes washer-scrubbers each of two million c.ft. nominal daily capacity and with 24-in. connections, the first washer being fed with weak liquor. There is an underground circular well (formerly a holder-tank) for the storage of tar and liquor, with a capacity of about 150,000 gallons. Under a portion of the purifiers is a rectangular tank capable of accommodating a further 70,000 gallons, which is employed to collect strong liquor for sulphate manufacture. Additional storage of tar and liquor is provided by two large rectangular tanks under the coke yard, with a combined capacity of 140,000 gallons.

Purifiers.—The purifier installation consists of four boxes (partly new and partly reconstructed) each 40 ft. by 20 ft. by 6 ft., containing oxide of iron, and having four openings to each box, fitted with steel covers and Milbourne's patent fasteners and rubber jointing; the whole set being operated by a "Pickering" valve with 24-in. connections throughout with double inlets. The covers and the fresh oxide are handled by means of a "Herbert Morris" system of runways suspended from the roof, and the foul oxide is discharged to the revivifying floor underneath through shoots on the bottom plates.

Station-Meter, &c.—The remainder of the plant is on the other side of Addington Street, where the 60,000 c.ft. per hour Parkinson station-meter and the 18-in. Parkinson station governor controlling the entire district are housed, together with the 10-in bye-pass governor between the inlet and outlet mains in case of

accidental closing of valves. The division of the district, with rearranged connections and 18-in. and 24-in. governors, is contemplated. The valve house and benzole carburettor house adjoining complete this block.

Gasholders.—There are only two gasholders, with a combined storage capacity of merely 1,050,000 c.ft. One is guide-framed and of three lifts; and the other of four lifts spiral-guided, and recently reconstructed from a two-lift guide-frame holder. The special guiding arrangements to suit the old tank are worthy of notice, and are of an entirely new design. A boosting set capable of dealing with 50,000 c.ft. per hour against a pressure of 12 in. is installed, in order to maintain the heavier holder fully inflated at times of greatest demand.

Offices, &c.—The Engineer's offices, general offices, boardroom, showrooms, test room, and laboratory, as well as stables, complete the remaining portion of the Company's property on the east side of Addington Street.

Sulphate of Ammonia Plant.—This is capable of making three tons per day nominally and is of the Wilton type, having Cornish boilers, stills (for free and fixed ammonia), lime-mixer, pumps, Taylor's solid-lead open saturator, superheater, and waste-gas neutralizing plant, with the usual tanks for dealing with the waste liquor, and storage tanks for its accommodation prior to discharge into the storm-water drains leading to the sea. The method of dealing with the waste-gases and the lead-lined gutterways round the saturator leading to the mother-liquor well are interesting features. A plant for the neutralization of sulphate is under consideration, complete with suitable drying means.

Tar Dehydration Plant, &c.—This plant adjoins the sulphate House, and is of the Hird, Chambers, and Hammond type, capable of treating 12 tons of crude tar a day, complete with still (having sides and bottom in one continuous plate), condenser of large size with wind screen, two draw-offs for products, and small purifier. Reinforced concrete tanks for light oils and dehydrated tar are built in the garden adjacent.

Boilers and Pumps.—The boiler and pump-house block contains two Lancashire boilers, 7 ft. diameter by 24 ft. long, fitted with Wilton's forced-draught furnaces in both cases (one being of the latest improved pattern for consuming coke breeze), and the required water, tar, and liquor pumps. Water is obtained from a well situated in Dane Hill, close to the corner of the general offices, and is drawn by means of an "Evans" pump of about 7500 gallons capacity per hour, with a "Tangye" pump as a stand-by (installed in the vertical retort house) delivering into an overhead cast-iron tank of 35,000 gallons capacity situated over the boiler house. "Skaylene" is adopted for the internal painting of these boilers, and the condenser outlet warm water is utilized for feeding them.

Miscellaneous.—Another block of buildings comprises the general and oil stores, with an unpacking room and overhead floor, a fitters' shop, with 12 ft. long and 7½ in. centres self-acting surfacing, turning, and screw-cutting gap lathes, drilling, punching, and shearing machines, &c., and gas-engine to operate these. A smithy with two hearths, as well as a carpenter's shop, are also contained in this block.

The General Foreman's house and garden communicate with the works by a gate close to the sulphate and tar-dehydration plants.

There is also a workshop for the overhaul of cookers, fires, radiators, lamps, &c.

At the works entrance, the District Superintendent's and General Foreman's offices are located, together with the weighbridge office, where the steelyard in connection with the 20-ton Pooley's weighbridge is housed, while overhead is the meter-testing room.

A private system of telephones is in vogue, which connects the Engineer's and general offices with all the other buildings on the works side, which (by reason of their being intercommunicating) are found of great service.

There are some 37 miles of low-pressure gas mains in the district, fed from an 18-in. main outlet from the works into two leading mains outside the gates branching east and west. There are also 2 miles of high-pressure Mannesmann steel main, having "Rigid" joints, laid down in 1910 for shop outside lighting.

All the gas-lamps in the town are incandescent, and number roughly 1300. There are also only two dozen 300 candle-power metallic-filament lamps on the Fort Sea Wall and approaches, installed in connection with the Pavilion and Winter Gardens. The lighting, extinguishing, and maintenance of the gas-lamps are in the hands of the Company (under the supervision of an official Lighting Inspector appointed by the Margate Corporation). This decidedly makes for the efficiency of the public lighting.

Pressures are regulated as the district requirements demand, and are heaviest in the summer (about mid-day), particularly on Sundays. The minimum pressure at the works during the night is 22-10ths all the year round. The Company obtained their Order under the Gas Regulation Act on Dec. 17, and declared 460 B.Th.U. gross per cubic foot as the calorific value to be supplied.

SPECIAL FEATURES.

This full description of the works (which is a reprint of the carefully-prepared brochure supplied by Mr. Campbell) needs but little amplification. We saw the verticals under reconstruction after their four years' run; and a setting which is still under heat seemed to be in excellent condition. The reconstruction work is being carried out by Messrs. Woodall, Duckham, Ltd.; and the latest type of setting with modern steaming arrangements is to be put in. It was noted, by the way, that brick-setting was being done in a mixture consisting of equal parts of silver sand, clay, and grog. The Engineer is hoping to obtain from the new retorts 18,000 c.ft. of 460 B.Th.U. gas—83 therms per ton—with a yield of 7½ cwt. of coke. This from Derbyshire coals; so Yorkshire should produce something to think about. While the Contractors are at work, the small inclined bench is tiding over the demand.

The Zimmer tray conveyor was the object of much attention. Coal falls through a trap underneath the heap on to the tray, to the framework of which a "throw" is imparted that moves an even stream of coal forward to the elevators. It must be an inexpensive installation from the points of view of both running costs and wear and tear. The Babcock and Wilcox gravity bucket conveyor is fitted with extra large buckets, and has been running for nine years without overhaul. This is rapidly becoming a very popular plant.

The conversion work that has been carried out on the purifier distillation is worthy of note. Originally there were three 25 ft. square boxes sunk in a pit. On extension becoming necessary, two of the present raised boxes were built alongside, and functioned while the old ones were dismantled and columns fixed and the roof raised to accommodate another pair. The plant as it now exists is very compact. The oxide is raised in wooden skips, which can be shunted over the runway above the boxes. In place of the 4-man winch which at present elevates the skids, could not a cantilever extension of the runway be built-out and a differential tackle used to hoist them direct? As mentioned above, the pit for the old boxes has been converted into a 70,000 gallon liquor storage tank.

The feature of the sulphate plant is that saturator and draining table are both accommodated in a single lead-lined container, with deep gutterways round leading to the tank. The effluent is run out to sea at high water.

To obviate the time lag in testing if the gas was taken to the "Sarco" recording calorimeter after scrubbing and purification, hot crude gas is treated in a miniature plant under the instrument. This consists of cooler, washer, and purifier, and gave rise to much interested comment. A Simmance-Abady calorimeter is used for calibrating the "Sarco" Beasley instrument.

The boosting plant is only used for the Sunday peak load—from 10.30 to 2 o'clock—due to the lavish boarding-house demand. The high-pressure connections are at points in the mains where few services exist, and the pressure is speedily dissipated.

THE "STEEL-ALL" GUIDE CARRIAGE.

Great interest centred in the guide-carriages fitted to the spiral 4-lift holder, which was recently converted from a 2-lift guide-framed. The carriage is substantially constructed in steel, and allows of minute adjustment in either direction. The sole-plate and three brackets are made with corresponding grooves or serrations, which at the same time facilitate the setting of the carriage and provide a joint of enormous strength. We regret we have been unable to produce in this report a photograph of the carriage as adapted to the built tank of the Margate holder; but we publish on another page of this number a detailed description and photographs furnished by the makers, Messrs. Saml. Cutler & Sons, of No. 39, Victoria Street.

A group taken with the spiral holder as background, further greetings, and many questions asked, concluded the inspection of the gas-works.

THE LUNCHEON.

Thereafter the members were conveyed to the St. George's Hotel, where they were the guests at luncheon of the Chairman and Directors of the Isle of Thanet Gas Company. Mr. Walter Hills (the Chairman) presided, and was accompanied by Mrs. Hills. There were present of the Board, Mr. W. Tomlin (with Mrs. Tomlin), Mr. W. B. Reeve (with Mrs. Reeve), Mr. W. J. Mercer, Mr. J. A. Gribble, and Col. E. O. Skey; while the absence of Mr. W. Young (owing to the death of his wife) was deeply regretted. His Worship the Mayor of Margate (Councillor H. B. Smith, J.P.) honoured the assembly with his presence; and it was a pleasure to find Mr. W. M. Mason (Manager of the British Commercial Gas Association) among the guests. The Town Clerk of Margate (Mr. Edward Brooke) had communicated his regret at being unable to be there. At the reception, bouquets were presented to the Mayoress, Mrs. Hills, and Mrs. Campbell by the Committee of the Association. On their behalf the presentation was made, charmingly and with a few well-chosen words, by Miss Cross (daughter of Mr. F. W. Cross, of Lea Bridge). The company numbered 125 in all.

Luncheon was excellently served, the while a ladies' orchestra played selections; and then the CHAIRMAN rose to give "The King." It is notable that he introduced the toast with well-chosen, loyal remarks—"Never in this country's history had the Throne been more securely established. They had a large-hearted monarch intent on the welfare of his subjects. The 'Loyal Toast' must never become a mere formality." After its fervent acknowledgment,

Mr. J. WESLEY WHIMSTER proposed the health of the "Mayor and Corporation of Margate." Their presence, he said, was proof of the good feeling which existed between the Company and the municipal authority—a good feeling which they as gas engineers were ready to appreciate. They had to thank the Mayor and Corporation for their kindness in inviting them to Margate and offering them every facility

for enjoyment. They were grateful for the permission granted to see over the water-works in the afternoon, and appreciated the trouble the Water Engineer had taken in preparing the brochure which would help them in their visit to the works. The members had only to read the daily papers to see that Margate was a go-ahead place, and he (the speaker) was sure those who had come would want to repeat the visit. There was no doubt that Margate was "go-ahead," though possibly some people might prefer Bath in the winter. [Laughter.] The lighting of the front at Margate was a great improvement on what was to be seen in most towns; and this was a big asset to the place. One very much appreciated gas lighting compared with electricity in such circumstances. They were lucky to have such fine weather for the occasion, and he hoped the afternoon trip would prove as pleasant as the visit had so far been.

The MAYOR said it gave him very great pleasure to respond to this toast. He could assure them it always delighted the Corporation to hear that such Associations as theirs were going to hold meetings in Margate. Their regret was that the visit was extremely short; and he hoped they would in future arrange for a longer stay, for it was wished to entertain them on some occasion. The entertainment tickets were an attempt to keep them there—as was the arrangement of fine weather. (Laughter.) Margate was nice even in the winter! He was glad to hear they had arranged to visit the water-works, for the Engineer had assured him that the machinery was the finest that could be seen. He was strongly in favour of privately-owned undertakings, and had heard of municipal works charging far more for gas than their private company. On behalf of the Corporation he thanked them for the toast, and hoped they would have a pleasant meeting.

Mr. W. M. MASON then pledged the "Southern Association of Gas Engineers and Managers." He considered it a great honour to be asked to give this toast; but his proposition must be short, as "Southern" men were in the majority and could not drink their own health. He wished to include others in the toast, and would divide it into two. First, the Southern Association, which for thirty years had done splendid work which, if a record could be made, would prove remarkable for scientific progress, and an ideal for the industry. Secondly, in the short toast list no place had been found for the most important one, as (if he might be permitted) for the first time they had had the good sense to invite the ladies! He gave three healths in one—the Ladies, the Southern Association, and his good friend the President and Mrs. Campbell.

The PRESIDENT rose amid acclamation to respond. They would agree, he felt sure, that the Southern Association had taken up things more fully than any other Association—in fact, he would repeat his former statement in London that "what the Southern Association thinks to-day, the industry will think to-morrow." He was proud that during his year of office the ladies had for the first time been invited to attend a visit, and would like to place the credit for it in the proper quarter, which was entirely the right one—with his Directors. He would like to say how sorry he was for Mr. Bennett's absence, and knew he could voice the member's feelings of deep regret; and it was suggested to dispatch a telegram of good wishes and sympathy to him in his illness. [The proposition was warmly accepted.] It was notable that there were present that day no fewer than nine Past-Presidents of the Association, and also several members who had been identified with it for 35 or 40 years. It was splendid to think they were able to be there, and he hoped they would long be spared to attend such functions.

On the proposition of the Chairman, the remaining toast was postponed till later, as it was time the programme was proceeded with. Accordingly, after the President had thanked the Committee of the Association on behalf of Mrs. Campbell and Mrs. Hills, to whom they had previously presented bouquets, the company adjourned for a photographic group which was taken outside the hotel.

THE DRIVE TO WINGHAM WATER-WORKS.

The main feature of the afternoon was to be the visit to the Margate Corporation water-works at Wingham; but on such a wonderful day every minute was enjoyable, and a long motor ride was the last thing to prove tedious. The Isle of Thanet in May is very good to look upon, and the notable absence of high hedges allows a generous view for miles round.

The history of the Wingham pumping station dates from 1900, when the Borough Engineer (Mr. Albert Latham) advised the Council to go there for a good and sufficient supply to meet the ever-growing demand. A Bill was promoted, and received the sanction of Parliament in 1902. The first plant consisted of two sets of triple expansion engines and pumps, each designed to lift 2 million gallons in 24 hours from a depth of 130 ft. and force the water through 14½ miles of 18-in. main to Margate; the storage consisting of a high-level tank (near Adisham) and a reservoir at Fleete. The mains supplied 22 outlying parishes. In 1907, Mr. E. A. Borg (the present Borough Engineer) was appointed Water Engineer, and realizing it was essential to augment the plant, obtained a confirmatory report that it would be safe to pump up to 2¾ million gallons per day and force the water in one operation to Margate—a combined head to work against equivalent to a height of 300 ft. The maximum known draught on the Fleete Reservoir was 142,000 gallons per hour. The new plant was constructed and erected by Messrs. Hathorn, Davey, and Co., of Leeds, in accordance with Mr. Borg's specifications.

A NOTABLE GATHERING AT MARGATE.

The scheme included the enlargement of the original working shaft outside the old engine house from five feet to fourteen feet diameter, to take new well pumps, the erection of a new engine house, the supply, delivery, and fixing complete of main pumping machinery capable of delivering from 3½ to 4 million gallons per day, the supply, delivery and erection of a high-service pumping unit, the coupling-up and enlarging of an existing high-service pump to the proposed new main engine, travelling crane, steam winch, barring engine, &c. The principal dimensions of the main engine are as follows: High-pressure cylinder, 20 in. dia.; intermediate, 36 in.; low, 53 in.; rams, 15½ in. dia.; well pumps, 16 in. dia.; stroke, 48 in. The total amount of steam used per hour during the trials varied from 2743 to 2888 lbs. The over-all mechanical efficiency of engine and pumps worked out at 90·9 p.ct. and 92·6 p.ct. The theoretical quantity of water raised by the three well pumps per stroke is 104·2 gallons, and by the three force pumps 97·7 gallons per stroke. The high-service pumping engine is of a type known as horizontal compound tandem surface-condensing rotative. It is direct-coupled to a double-acting ram pump, and is easily capable of raising 160 gallons of water

per minute from the reservoir at the rear of the pumping station to a height of 275 ft. above the engine-house floor.

This plant is a thing of great mechanical beauty, and the members found the time available all too short to satisfy their interest. It is notable that Kentish coal is used under the Babcock and Wilcox boilers; and we were informed by the firemen that it is an excellent steaming coal but containing rather much shale. The ash seemed very little. The coal has an unusually friable construction.

Time was getting on, so reluctant members were collected and the drive continued. St. Margaret's Bay was the next objective; but the route lay through Dover. To many the last recollections of its magnificent harbour were connected with "leave trains" and dirty-looking transports; and the contrast was a pleasant one. The mysteries of the Castle to some extent evolved into green fields and a wonderful prospect; and soon after, the cars dropped down to the Granville Hotel, St. Margaret's Bay.

Tea and Speeches.

This is a delightful spot—in spring at any rate—secluded along the shore, and approached by steep roads from the high chalk cliffs. To the north is the simple Memorial to the Dover Patrol, faced by its counterpart on French soil opposite. Here the party took tea at the Hotel, in the course of which the President announced the receipt of a wire from Mrs. Bennett, thanking the Association for their good wishes to their Secretary and conveying his and Mrs. Bennett's disappointment at being absent. Then the luncheon toast list was completed by Mr. W. Doig Gibb, O.B.E., M.Inst.C.E., who rose to thank the Isle of Thanet Gas Light and Coke Company for their hospitality.

The Association had, he affirmed, enjoyed exceptional hospitality. A company could give this by merely spending money, but there had been in evidence a kindly feeling which appealed to all. It was unnecessary to refer to the history of the Company. They had come through strenuous times during the war; but they were recovering, through the efforts of their Directorate and their Management. In connection with the latter, probably most of the members knew that he (Mr. Doig Gibb) and Mr. Campbell once occupied adjacent drawing boards in Glasgow. He considered it a personal privilege to be there to congratulate Mr. Campbell on the success of his career and on his being worthy of selection as President of the Southern Association. He asked the members to thank the Isle of Thanet Company for giving them a most enjoyable day, and for thinking Mr. Campbell's colleagues were also worthy of recognition.

Mr. Walter Hills, in reply, desired to thank the members most sincerely for their warm acceptance of Mr. Doig Gibb's speech. Mr. Doig Gibb was one of the greatest experts in the gas industry, and during the war had done excellent work for his country. He was (he understood) very strong indeed on the question of inerts, and men of the gas industry had much to thank him for in what he had done during the official inquiry. Proceeding in lighter vein, the Chairman called to mind that he had said much about Mr. Campbell at the Connaught Rooms in London, and Mr. Doig Gibb apparently held him in high esteem. Afraid to lose him, they must find some weak spot in his character; and he regretted to inform them that Mr. Campbell had recently sold coke to their struggling French friends at £10 per ton! What man would do such a thing and not repent? He would never do it again—without being given the opportunity. With good wishes to all present, he closed amid applause.

The President, in thanking Mr. Doig Gibb and Mr. Walter Hills for their gracious remarks, voiced the gratitude of the Association to the Mayor and Corporation of Margate, as well as to the Chairman of the Water-Works Committee (Alderman S. Shea) and the Engineer, for permitting the visit to the Wingham pumping-station, which for interest had surpassed their expectations.

Alderman Shea suitably acknowledged their thanks, saying his Committee had only been too pleased to offer facilities for the visit.

Shortly afterwards, the party re-embarked for the homeward journey, conscious that a most enjoyable day was nearly over. But to revert for a moment to the day's eloquence, we feel our duty is to report two observations made to us last Friday. One was surely Mr. Walter Hills was the second of the two men, one of whom got up because he wanted to say something, and the other of whom got up because he had something to say. We could say quite a lot about the genial personality and wit of Mr. Hills. The other observation concerned the toast list too—surely it called to mind a successful meeting last year, and a subsequent letter from one who hailed from North of Tweed.

The Coast Road Home.

The return road wound with the coast through Walmer, Deal, and Sandwich, a green country far-famed in the world of golf, but figuring largely in every history book, as the architectural and ancient toll-bridge of Sandwich reminded us. Then modern history asserted itself in the form of acres of shops and offices, almost miles of derelict trucks and coaches, tugs and larger vessels lying inert, and a vast coaling jetty and wharf silently guarding two cross-channel train-ferries—once a hive of organized industry, but now the desolation of Port Richborough. There must have been something wrong with a certain Government Department; and Richborough is but one example of good stuff lying to rot.

The entrance to Ramsgate afforded a magnificent view of Pegwell Bay, and the town appeared to be putting on its best clothes to welcome summer visitors. The sun was nearly down when finally the St. George's Hotel was reached, and parties broke-up with mutual congratulations on yet another memorable meeting of the Association.

A Pleasant Finale.

As a fitting close to the very happy time spent at Margate, the members of the Association and their wives who remained in the town over the week-end gathered together at the St. George's Hotel on Saturday evening for dinner, and entertained the Chairman of the Isle of Thanet Gas Company and Mrs. Walter Hills, and the other members of the Board and their wives, with the Engineer and Mrs. Campbell and the Secretary and Mrs. Stickels, in order to show their appreciation of the kind and generous hospitality which had been bestowed upon all who had attended the meeting. A party of 38 sat down and enjoyed the function so admirably arranged by Mr. J. R. H. Jacobs, of Southampton. Mr. A. Caddick, of Croydon, presided; and Mr. A. E. Broadberry, of Tottenham, occupied the vice-chair. A very pleasant time was passed; and afterwards the party adjourned to the dancing hall for the remainder of the evening.

On Sunday afternoon, Mrs. Campbell entertained to tea at her private residence the members and their wives remaining in Margate, when a party of twenty or so much enjoyed her further hospitality.

SEPARATION OF RARE EARTH COMPOUNDS.

[From the "Chemical Trade Journal."]

Nearly all procedures hitherto brought forward for the separation and purification of any or all the rare earths involve a series of fractional crystallizations or precipitations, some so tedious that only several hundred repetitions serve to give a pure product. In an attempt to find a simple method for obtaining pure ceria earths, the following suggested itself to Mr. R. H. F. Manske.*

The method adopted depends on the solubility curve. At 41° C. the three sulphates of cerium have very nearly the same solubility; and, furthermore, at this temperature the solubility of the cerium compounds lies just midway between those of præseodymium (more soluble) and neodymium (less soluble). Again, in the region between 62° C. and 75° C. the two stable sulphates of cerium have a solubility between the solubilities of neodymium and lanthanum.

As is well known, the separation and purification of cerium present no great difficulties; and in most procedures it is first removed before the separation of the other earths is attempted. The method under discussion, however, assumes the presence of a large amount (some 50 p.ct.) of cerium; otherwise it would be a failure. Suppose a solution (saturated at zero) containing all four earths as sulphates is rapidly heated to 41° C., and then vigorously stirred to induce crystallization, it is plain that only lanthanum and neodymium sulphate which might crystallize out would not be contaminated with præseodymium (from which they are with difficulty separable), but with cerium sulphate (from which they are easily separable) until most of the cerium has been precipitated. Or, if a solution (saturated at zero) containing the four salts in solution is heated to 65° C., any lanthanum that would crystallize out would be nearly free from the neo and præseo salt as long as any cerium was left in solution.

The procedure is therefore simple. It amounts to fractional crystallization by heating a cold, saturated solution to 41° C. until a mother liquor is obtained that does not show the absorption spectrum of neodymium in thick, concentrated layers. The cerium is separated from this mother liquor, and the pure præseodymium precipitated by oxalic acid in acid solution. The oxalate can be converted into any desirable salt. Fractionation is continued by this process on the less soluble fractions until the crystals show no absorption spectrum (in concentrated solution) of præseodymium. Ten fractions serve to give a very pure product—that is, free from præseodymium. This last fraction is now dissolved in ice water to saturation, and rapidly heated to 65° C., and then vigorously stirred.

The mother liquor is nearly free from lanthanum when the neodymium begins to show the residue in large amounts. Fractionation is, however, continued until the arc spectrum of lanthanum ceases to show in the mother liquor. The latter then contains pure neodymium with some cerium. From this the neodymium is easily obtained. Fractionation is continued with the less soluble fractions until the absorption spectrum of neodymium ceases to show in a saturated solution of the less soluble fractions. From this the lanthanum is obtained by separation from cerium. If samarium is present, it divides itself between the neo and præseo salts.

* "Canadian Chemistry and Metallurgy," April, 1922.

Engineering at the British Empire Exhibition, 1924.—The British Engineers' Association have been entrusted with the task of organizing the Shipbuilding, Marine, Mechanical, and General Engineering Section of the British Empire Exhibition to be held in London in 1924; and the work will be controlled by a Special Committee composed of the President and Council of the Association, and a number of independent representatives of the engineering industry. Within the limits of the space available—about 238,000 sq. ft.—every effort will be exerted to make the engineering exhibits representative of all that is best in modern British practice. Inquiries should be addressed to Mr. D. A. Bremner, Director, British Engineers' Association, No. 32, Victoria Street, London, S.W. 1.

CUTLER'S "STEEL-ALL" GUIDE CARRIAGE.

Obviously a most important point in spiral gasholder construction is the guide carriage; and Messrs. Cutler have designed and patented one which they claim to be of special suitability. Its chief features are the entire elimination of cast iron and the ease and certainty of its adjustments. The whole of the parts being constructed of steel ensures against every risk of fracture, and provides the maximum reliability for resisting the severe and varying stresses to which spiral gasholder guide carriages are subject. The methods of adjustment are ingenious, complete, and efficient, allowing each roller to be individually regulated, and thus ensuring the smooth and correct working of the holder in ascent and descent, not only at the time of erection, but under the various conditions that develop during long and continuous service.

The patent "Steel-All" carriage with "Lock-Fast" adjustments comprises a substantial mild-steel sole plate upon which is mounted a pair of heavy wrought-steel axles with wing-plate bases forged solid from the axle bars and firmly secured to the sole plate, as shown by the accompanying illustration, fig. 1. The rollers which rotate upon these axles are of stamped steel, and are gunmetal bushed to ensure easy rotation. Stauffer lubricators are fitted on the forged-steel axles, and oil ducts carry the lubricant to the roller bearings.

The rollers are permitted a limited radial travel upon the axles by means of a floating adjustment, so as to allow them automatically to adjust their positions to small variations in the position of the spiral guides due to fluctuating temperatures, and thus keep in constant and correct alignment with the fixed spiral rails. The axles mounted upon a common bedplate can be separately adjusted in the radial direction to coincide with the positions of the spiral rails; but their tangential centres are maintained at the correct spacing to accord with the unalterable section of the guide rail.

To obviate the reduction of the gripping effect which is ordinarily associated with slot-hole adjustments, there is provided beneath the nuts of the attachment bolts a special form of steel washer-plate serrated or grooved on the underside, which, by engaging in equivalent serrations or groovings provided in one direction upon the sole plate and in the other direction upon the brackets, prevents any movement of the attachment bolts in the direction of the major axis of the slotted hole (see fig. 2). This maintains the unimpaired efficiency of the bolted connections, while providing for a ready and easy adjustment with absolute lock both radially and laterally.

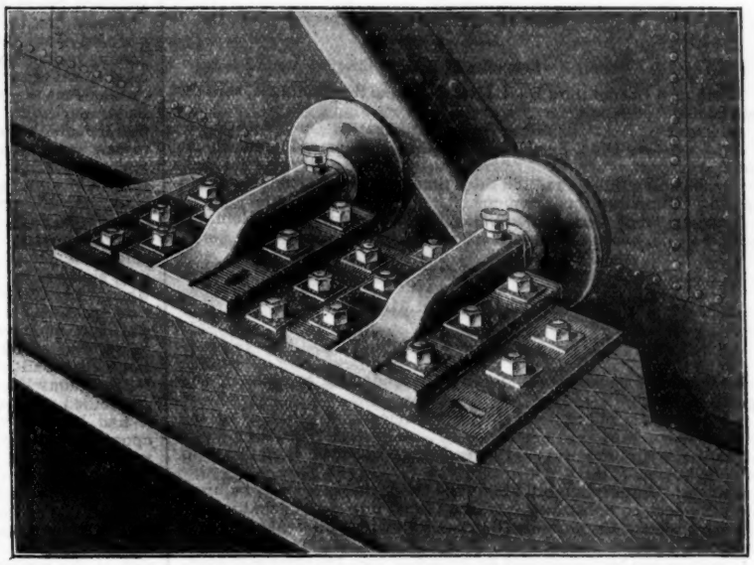


FIG. 1.—PATENT "STEEL-ALL" TANK CARRIAGE.

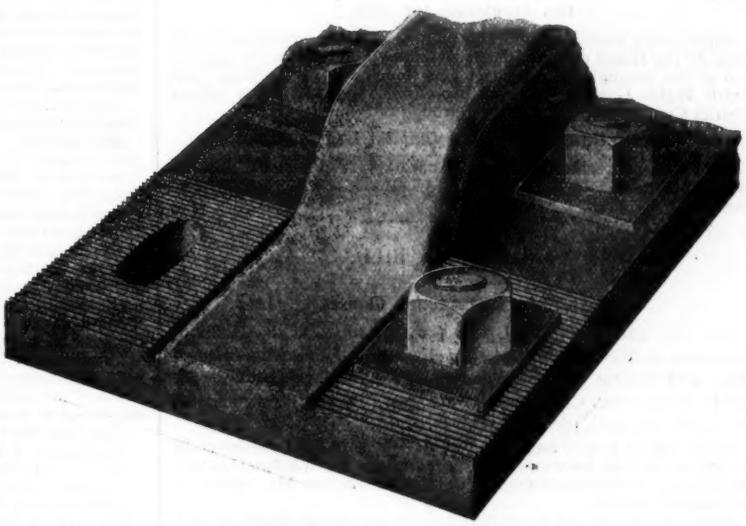


FIG. 2.—PATENT SERRATED LOCKING WASHERS.

Glover-West Verticals at Vancouver.

The Glover-West vertical retort installation of approximately 1 million c.ft. daily capacity at the Vancouver Gas-Works, which was officially opened in January by Mr. George Kidd, the General Manager of the British Columbia Electric Railway Company, consists of 24 retorts in three benches of eights; and the layout has been so arranged that an extension of five more benches can later be added. The retort-house has been built at right-angles to a creek, up which coal is brought; and the whole arrangements for coal and coke handling have been designed for the most economical operation. The storage bunkers above the retorts hold 48-hours' supply. The discharged coke feeds direct into a gravity-bucket conveyor, and is raised and carried across the ground left for the extension of the plant to storage hoppers, where it is mechanically screened and distributed into large coke and breeze compartments. So far, three classes of coal have been carbonized, all mined in the district—namely, Cassidy, Ladysmith, and Comox. Each of these coals possesses distinct characteristics. Cassidy, for instance, is very fine coal, with here and there larger pieces. It is, says the "American Gas Journal," a good gas-making coal, and one giving good coke. Ladysmith is larger, and more even in size, and is also of good gas-making quality; but it results in smaller and softer coke. Comox coal does very well in the verticals, but swells considerably, and results in very large, hard coke. It is an inferior quality coal, low in volatile matter, and very high in ash—about 22 p.ct. Gas of about 480 B.Th.U. is being made, with steaming. Two men per shift do all the work in the retort-house, and the wheeling of the ashes to the yard; an extra man in the day shift being employed to attend to the handling of the coal.

Wales and Monmouthshire District Institution.—There is to be a meeting of the Wales and Monmouthshire District Institution of Gas Engineers and Managers in the Park Hotel, Cardiff, on Thursday, June 8, at 11 a.m., when the chair will be taken by the President, Mr. James Robb, of Chepstow. In addition to the formal business, there will be an address by the President, which will be open for discussion; while another item on the agenda is a presentation. After lunch, as the guests of the Cardiff Gas Light and Coke Company, there will be an inspection of the Company's showrooms in Queen Street and of the Grangetown Gas-Works, under the direction of Mr. George Clarry (the General Manager and Secretary) and Mr. H. D. Madden (the Engineer). Tea will then be provided at the Bute Terrace offices of the Company.

Occlusion of Gases in Coal.—The great trouble about the analysis of coal and the estimates based upon the analysis is, says "Engineering," that the analytical processes themselves affect the coal so that the methods of examination are conventional. This concerns the very first quantity determined in any analysis, the moisture, and, further, the volatile constituents and the occluded gases. The occluded gases can be determined by pumping off the gas liberated, or by collecting the gas given off in a vacuum, either at ordinary temperature (15° C. or lower) or at 100° C. Especially at ordinary temperature, the experiments will last many days; and there is evidence that the first liberation of the gas will be followed and accompanied by a re-absorption, and that the establishment of an equilibrium condition will be a slow process depending, among other conditions, on the diffusion of gas from the inner layers up into the first-evacuated surface layers of the coal.

PARLIAMENTARY INTELLIGENCE.

HOUSE OF LORDS.

Progress of Bills.

Blackburn Corporation Bill: Returned from the Commons, with the amendments, agreed to.

Chester Gas Bill: Reported, with amendments.

Croydon Gas Bill: Read the third time, and passed; sent to the Commons.

Sheffield Gas Bill: Read the third time, with the amendments, and passed; returned to the Commons.

Stoke-on-Trent Corporation (Gas Consolidation) Bill: Returned from the Commons, agreed to, with amendments.

HOUSE OF COMMONS.

Progress of Bills.

Blackburn Corporation Bill: Lords' amendments considered, and agreed to.

Croydon Gas Bill: Read the first time, and referred to the Examiners.

Neath Corporation Bill: As amended, considered; read the third time, and passed.

Ramsgate Corporation Bill: Standing Orders not previously inquired into have been complied with; read a second time, and committed.

Stoke-on-Trent Corporation (Gas Consolidation) Bill: As amended, considered; read the third time, and passed, with amendments.

A petition has been deposited on behalf of the Aberdare and Aberaman Consumers' Gas Company and other gas companies in South Wales against the South Wales Electrical Power Distribution Company.

Gas Regulation Act, 1920.

Copies were presented of drafts of Special Orders proposed to be made by the Board of Trade under section 10 of the Act on the application of the Sittingbourne District Gas Company, the Holyhead and North Wales Gas and Water Corporation, Ltd., Hinckley Urban District Council, and the County Borough of Southport.

Public Utility Companies (Capital Issues) Act.

A copy was presented by the Board of Trade under the Act on the application by the Rochester, Chatham, and Gillingham Gas Company.

WINDSOR GAS BILL.

Basic Price and Auction Clauses.

This Bill was before the Unopposed Committee of the House of Commons on Wednesday last. Mr. Fitzalan Hope (Chairman of Ways and Means) presided; and the Committee consisted of Sir Edwin Cornwall, Commander Bellairs, Mr. Hayward, and Sir Ernest Moon, K.C. (Speaker's Counsel).

The Committee, who had been considering other Bills, conferred in private for an hour before dealing in public with the Windsor Gas Bill, and during the course of their deliberations sent for Mr. Honey, of the Board of Trade.

When the parties were re-admitted to the Committee Room,

The Chairman, speaking to Mr. E. Campbell Cooper, Parliamentary Agent, said: With regard to the Windsor Gas Bill, the Committee are of opinion that there are some large questions of principle and precedent involved in the Bill, and have been giving some consideration to these principles. The first is with regard to what is known as the basic price of gas, and the second with regard to the method of raising capital. Take these two matters separately. The Committee feel that it would be dangerous to give any extension, without safeguards, to the principle of the basic price as opposed to the old former principle of the standard price of gas; but they admit that, in the circumstances of the time, they cannot expect the promoters to go back to the old system. At the same time, they feel they have not the material or the machinery to fix the basic price themselves for the purposes of this Bill, and they are disposed to insert into the Bill something similar to clause 11 of the Swansea Gas Act, 1921, which refers this matter to the Board of Trade, but to add to that, that any decision the Board of Trade may take on this matter may be subject to revision by them at any time after Dec. 31, 1924. This will no doubt mean some consultation before any such clause can be drafted. Then with regard to the auction clauses, there, again, the Committee feel that it would be better, if possible, to go back to the old system of the auction clause which secured the money at the best possible price, and was intended, as originally framed, to benefit the consumer. There, again, they recognize that we are in a period of transition, and they are disposed to admit a clause providing that public subscriptions shall be allowed—that the promoters shall be free to raise their money by public subscriptions rather than under the auction clause—under conditions to be approved by the Board of Trade. Of course, we are naturally willing, before coming to any absolute decision on these matters, to hear what the promoters have to say; but we are quite clear that we have not the means or the machinery, sitting as an Unopposed Bill Committee, to fix the basic price. That we are clear about. The rest of what I have said is subject to anything you may wish to put before us.

Mr. Cooper, speaking with reference to the difficulty the Committee felt in fixing the basic price, said he was prepared with evidence from chartered accountants that he believed would satisfy the Committee as to whether the basic price proposed in the Bill was reasonable or not. He felt it his duty to ask why there was any greater difficulty in settling the basic price in this case than the Committee had hitherto felt, ever since the Unopposed Committee had been established, in settling standard prices or maximum prices in the case of Gas Bills. He imagined that the fact that the Bill was unopposed, and had been unopposed from the beginning, would weigh with the Committee in coming to their own conclusion that the price asked for was reasonable or not, and that the Committee would also have considered the opportunities that the local authorities had had to oppose this Bill, if they had thought fit. This particular measure had been before the Corporation of Windsor ever since last December; and the promoters had reason to know that they were satisfied with the price asked. He might be asked: "How is it that they have been satisfied?" He respectfully submitted that the reputation of the Company—the Company's record—counted for something in the locality from which they came. They knew that for many years past the Company had not charged up to their maximum price, which had been appreciably below the prices charged by neighbouring companies. During the war, and for two or three years since, they had kept the price at 3s. when other companies were charging much beyond that figure. He would not detain the Committee at length, but was only now on the particular point as to what considerations the Committee had hitherto had regard to in fixing standard or maximum prices in the numerous cases that had come before them as the Unopposed Committee. Neither himself nor his friends could see that the Committee were confronted with any greater difficulty in settling the basic price than if it had been a standard price. Unfortunately, he had not had an opportunity of giving his explanation of what the basic price was, or the way in which it worked; but he had no doubt that the learned Speaker's Counsel had explained to the Committee what its precise operation was, and what it meant. At the same time, he confessed, in the interests of his clients, that he would have liked, before the Committee came to any decision—even a provisional decision—in this matter, to have had an opportunity of giving the Committee his explanation of the working of the basic price. He thought he could show that there was really no great difficulty in it, and he could have shown how satisfactory the working of the basic price principle was in the public interest. With regard to the auction clauses, his clients felt, and they had always felt, in common with other small gas companies in the kingdom, that the auction clauses never were the most satisfactory method of placing local capital, in the case of a small provincial gas company. There was no market in these shares; and the amount of capital available was always, more or less——

The Chairman: Has your attention been called to clause 17 of the Sheffield Gas Company's Bill?

Mr. Cooper: Yes. But without stating what it is, I say at once that this Company is not comparable with Sheffield.

Sir Ernest Moon: Are you familiar with the Provisional Orders which the Board of Trade are issuing, allowing public subscriptions under certain conditions?

Mr. Cooper: I have not had an Order where that condition has been put upon me. Of course, if the Committee feel that the provision that the Board of Trade may impose conditions for public subscriptions is necessary in the public interest, then I must accept it; but I have not had the time to consider the whole of this clause.

The Chairman: Naturally the Board of Trade will have regard to the position of Windsor compared with a great city like Sheffield.

Mr. Cooper: No doubt they would. I have not had an opportunity yet of studying this provision; but I understand that it is that the whole of my capital may go to public subscription with the consent of the Board of Trade, on the conditions they impose. Is that so?

The Chairman: Yes. The words are clear in that clause.

Mr. Cooper: Very good, I will accept that provision.

Sir Ernest Moon: The Standing Order is still in force. You are asking us to disregard the Standing Order.

Mr. Cooper: The Standing Order, if I remember the words rightly, says: "If the Committee think fit"——

Sir Ernest Moon: No.

Mr. Cooper: The Committee may dispense with the Standing Order if they think fit.

Sir Ernest Moon: Never mind.

Mr. Cooper: I have had it dispensed with. It was dispensed with last year in Cardiff and Swansea, and in a pre-war case—the case of the Wadhurst Gas Company—because the Committee felt it would be useless to expect to raise the capital by auction in that case. And may I say one word with regard to your decision to subject me to the provisions of clause 11 of the Swansea Act? May I say this—that the Swansea case is a totally different case from this one? The sole reason why the Committee in the Swansea case referred the question of the settlement of the basic price to the Board of Trade was because, unfortunately, though we had hoped to have it, we had not got the therm Order of the Board of Trade as a basis to go upon. In the Cardiff Bill, immediately preceding the Swansea Bill before the same Committee, the Committee passed the basic price because they had the therm Order of the Board of Trade to go upon; but when it came to Swansea, and we had to explain that, unfortunately owing to the amount of work that had been put on the Board of Trade, we had been unable to get the therm Order in time for the Committee, then the Committee said that, without the therm Order, they did not feel competent to settle the basic price. In the present case, we have the therm Order; and if I may be allowed to say so, with the greatest respect to this Tribunal, I cannot see what the difficulty is for this Committee to adjust the basic price to the therm price after hearing the evidence I have to produce.

Sir Ernest Moon: There are one or two minor matters. You are asking that back dividends may be paid. That is another new proposal.

Mr. Cooper said the point was this—under the present sliding-scale clause, if he wanted to stimulate the consumption of gas and reduce the price, and the reduced price did not bring him in the money to pay the standard dividend or any increase of it, he had to go without it altogether, and the shareholders were fined. This clause was based on the Grays and Tilbury Act of 1917, and it had been a matter which had formed the subject of considerable discussion among gas

men, as to why a company, in the future, when the result of the reduced price had so stimulated the consumption as to provide the money to pay the authorized dividend in previous years, which, however, had not been declared because the money was not available in those years, should not be allowed to pay these back dividends out of the profits of the future years. By tying the companies down to a dividend on the profits of the particular year in which the price of gas was reduced, they were limiting the stimulus which one would have thought this Committee and Parliament generally ought to give to encourage gas companies—viz., to sell gas at the lowest possible price. The clause in the Tilbury Gas Act of 1917 was in precisely the same words. That was a sliding-scale company. After enacting what the profits of the Company were, it went on to say: "Provided that if in any half year a less amount shall be paid in respect of dividend on the ordinary capital or set apart for reserve fund than under the provisions of this Act authorized to be so paid or set apart, the deficiency may be made up out of the profits of any succeeding half year." Surely it was all to the public interest——

The CHAIRMAN: It puts these shares in the position of cumulative preference shares.

Mr. COOPER: No, I do not think so.

The CHAIRMAN: Something very similar.

Mr. COOPER: No. The preference stands upon its own footing; the ordinary dividend comes in after the dividend on the preference shares.

The CHAIRMAN: It makes it cumulative instead of non-cumulative.

Mr. COOPER said that in a sense it was cumulative, if they had got the money. Suppose the price of gas, after this Act passed, was reduced to a price which was not a business price really, and would not be a business price for two or three years. At the end of that time it had so stimulated the consumption that he had got a gross sale which produced a sum which enabled him to pay dividends which he had not been able to pay in previous years. Surely he should not be fined for his enterprise and his desire to sell the consumer cheap gas, by mulcting him of the dividend that he was entitled to during the previous two or three years when he had reduced the price, when in later years he had got the money and the consumers had had the benefit of cheap gas. He was assuming that the consumers had taken very much more gas, and that other consumers had come in, and that he had got the money which enabled him to pay the dividend to which he was entitled in the previous years. It would be an inducement to the Company to sell gas as cheaply as they possibly could, and the directors should not be left in the position that if they reduced the price of gas and increased the revenue they could not pay back-dividends on the ordinary shares. He should like to call evidence on this point, if the Committee had any doubt about it. It seemed to be a very reasonable provision, and there was no question of principle involved at all. He could not see any question of principle.

The CHAIRMAN: We will discuss it.

The Committee conferred.

The CHAIRMAN: With regard to the last point, the Committee do not feel able to deal with the matter on its merits. With the possible exception which you have quoted, it is quite against the whole weight of precedent in these matters, and the Committee do not feel able to grant it. The Committee also adhere to their provisional decision that they cannot consider the basic price for the purposes of this Bill, and they would ask you to confer with the Speaker's Counsel in order to bring up something analogous to the Swansea clause on the matter of the basic price, and something analogous to the Sheffield clause in the matter of raising capital by subscriptions. We will adjourn the hearing until the next Unopposed Bill Committee.

Mr. COOPER: May I inquire whether you will ask Mr. Honey when he will take into consideration the settlement of the basic price, because what I want to guard against is not being able to put my Bill into force until (say) next Christmas? The basic price was not taken into consideration by the Board of Trade in the Swansea case until the following Christmas; and I am anxious to guard against the hanging-up of my Bill.

The CHAIRMAN: That must be one of the things you must consider in drafting your clause.

CHESTER GAS BILL.

This Bill [see the "JOURNAL" for March 1, p. 495] was before the House of Lords Unopposed Committee on Tuesday of last week, and was ordered to be reported for third reading.

Amendments have been made to clause 5, which previously provided that the basic dividend should be 6 p.ct. per annum on the ordinary capital issued before the passing of the Bill, and at the rate of 8 p.ct. per annum on ordinary capital issued after the passing of the Bill. The amendments provide that the dividend on the ordinary capital issued before the passing of the Bill shall be 5 p.ct., and on that issued subsequently 7½ p.ct. per annum.

The CHAIRMAN (the Earl of Donoughmore) incidentally mentioned to Mr. T. Segar Berry (of Messrs. Sherwood & Co., Parliamentary Agents) that the principle of the basic price and dividend had not yet been finally decided, and had to be discussed. He just wanted to point this out, although he was not going to stop the Bill.

Nuneaton Gas Company.—The accounts show that the net profit of the Company for the year ended March 25 was £2117, and that an amount of £7212 was brought in. After deduction of interest charges, income-tax, &c., there remains a balance of £6625. The Directors do not recommend any dividend.

Price of Gas at Bury.—As from April 1 last, consumers of gas for domestic purposes in Bury are being charged 4s. 6d. per 1000 c.ft., subject to a discount of 1d. for prompt payment, and an additional rebate of 1d. per **1000 c.ft.**—a portion of the profits accumulated during the past two **or three years.** This will make the net price 4s. 4d. per 1000 c.ft., as against 5s. 3d. a year ago.

LEGAL INTELLIGENCE.

A COMPENSATION CASE AT WANDSWORTH.

A case of considerable importance to gas companies was heard a the Wandsworth County Court last week, before His Honour Deputy-Judge HODGES. This was an application, under the Workmen's Compensation Act, made by Mrs. Mary Burns, widow, of Worple Road, Wandsworth, for an arbitration award of £300 as compensation for the death of her husband, Thomas Burns. The respondents were the Wandsworth, Wimbledon, and Epsom District Gas Company, in whose employment the man was at the time of his death. On Aug. 15, 1921, deceased was crushed to death by a coal-conveyor in a tunnel at the Gas Company's works at Fairfield Street, Wandsworth. Respondents denied that they were liable to pay compensation, on the ground that the man's death did not result from a personal injury by accident arising out of his employment.

Mr. WILLIAMS (Barrister) appeared for the applicant, and Mr. SHAKESPEARE was Counsel for the respondents. Among those present representing the Gas Company were Mr. C. M. Croft (Chief Engineer), and Mr. A. W. Gosden (Solicitor).

Mr. WILLIAMS, in opening, said that the late Thomas Burns was employed by the respondents as a general labourer; and on Aug. 15 last, he was instructed to trim coal from a barge moored in the river, adjoining the Wandsworth Gas-Works. During the afternoon, deceased appeared to have told the foreman that he required to go to the lavatory, and he was last seen going in that direction. He was not seen again until some time later, when he was found fatally crushed under the coal-conveyor in the tunnel. [A model of the tunnel and coal-conveyor was produced for the purpose of explaining how the accident happened.]

A number of the Gas Company's employees (all of whom attended on subpœna) were called on behalf of the applicant to give evidence in connection with the circumstances attending the accident.

James Blackburn, employed at the Wandsworth Gas-Works, said that on the day of the accident deceased told him that he was going to the lavatory, which was about 90 yards away. Witness was not in charge. The foreman was working elsewhere at the time. Witness did not see deceased again until he was found in a dying condition under the conveyor in the tunnel. There were three notices at the river end of the tunnel warning employees against entering the tunnel, and stating that any workman found there without authority would be instantly dismissed. In reply to Mr. SHAKESPEARE, witness said that at the lavatory end of the tunnel there was a 4 ft. wall, which would have to be climbed over in order to enter the tunnel.

His HONOUR asked witness if the wall was there to prevent people from entering the tunnel; and he replied that it was.

Mr. WILLIAMS said his suggestion was that the deceased went to the lavatory *via* the retort-house and returned through the tunnel.

Witness added that, prior to trimming coal, deceased had worked as a stoker during busy periods in No. 3 retort-house.

Mr. SHAKESPEARE put it to the witness, and he agreed, that the work which deceased was doing on the day of the accident was absolutely unconnected with work in the tunnel in any way, and that whether the man entered the tunnel at the river end or at the lavatory end, he was going to a place where he had no right. Witness also agreed with Counsel that the tunnel was dark and dangerous to go through when the conveyor was working.

John Baker (a coal-conveyor attendant at the Wandsworth Gas-Works), whose evidence was taken on commission, said the conveyor tunnel was very dark. It was not safe for a person to use the tunnel unless it was flooded with light. Workmen were not allowed to go through the tunnel without authority; and it was his duty to give that. The general foreman and the machine attendant could authorize a man to go into the tunnel, but no one else could do so. Warning notices were exhibited at the river end of the tunnel. The deceased was a general labourer; and his work on the day of the accident did not make it necessary for him to enter either of the conveyor tunnels. Witness did not authorize deceased on that day to go through either tunnel. Deceased had no right to go through the tunnel in order to go to the lavatory. He should have gone through No. 3 retort-house or by the path alongside of the canal. About half-an-hour after deceased had left him, witness heard someone shouting for help; and he rushed down the ladder and went into the large conveyor tunnel at the river end. At that end there was a wooden stage over the conveyor; and on looking between the machine, he saw a man's leg. The deceased must have seen the warning notice boards outside the tunnel very frequently.

Cross-examined, witness said that there were 24 gas-jets in the tunnel. There was a space of about 3 ft. 6 in. between the side of the tunnel and the conveyor. He had never seen any one come from the lavatory through the tunnel.

This closed the applicant's case.

Mr. SHAKESPEARE, on behalf of the Gas Company, said it was obvious that, on the day of the accident, deceased was in the tunnel without authority. If a man was in a place where he had no right to be, and he met with an accident, the accident could not be said to arise out of his employment. Counsel proceeded to cite legal decisions in the House of Lords and the Appeal Court in support of his argument.

His HONOUR said the question was whether deceased was acting within the scope of his authority in being in the tunnel where he met with his accident.

Mr. WILLIAMS, for the applicant, said that, although deceased might have been breaking a rule in being in the tunnel, the respondents could not necessarily rely on that for their defence. He contended that the accident arose out of deceased's employment. At the time of the accident, the deceased was not doing anything which took him out of the sphere of his employment. He was simply coming back to his work in what might have been a dangerous way.

His Honour: Do you suggest that the act in which he was engaged was such that it did not take him out of his employment?

Mr. Williams: Yes.

His Honour: Why do you say that?

Mr. Williams: He was returning to work through a dangerous or even prohibited way. But that is not the same thing as acting outside the sphere of his employment. He did not go into the tunnel for the purpose of doing any one else's work.

His Honour: What did he go there for?

Mr. Williams: It is perfectly clear that the man went through the tunnel simply as a short way back to his work. It is true that at the river end of the tunnel there are warning notices. At the lavatory end, there are no notices, and no one is in charge. There was nothing except this low wall (which one could step over without difficulty) to prevent this man from getting into the tunnel and making a straight line back to the river end of the tunnel where his work was. Counsel cited legal authorities in support of his argument.

His Honour, in giving judgment, said the question which he had to decide was whether, at the time of the accident, deceased was engaged on work which was within the scope of his employment. On the day of the accident, deceased was engaged in unloading coal from a barge, and had no authority or instructions to go through the tunnel. Whether he was going to the lavatory or returning from it, he was in a place which was dangerous, and in a place where he was not employed. He (the Judge) found that deceased had no right to be in the tunnel, and that the accident did not arise out of, or in the course of, his employment. In fact, it was quite outside the scope of his employment.

Judgment was given for respondents.

Action to Recover Plans.

An action was recently brought by the Chester-le-Street Gas Company, in the Durham County Court, against Mrs. Edith Hemingway, widow of Mr. G. Hemingway, the late Manager of the Chester-le-Street Gas-Works, to recover possession of certain plans, or, as an alternative, damages for wrongful detention. It appeared that Mr. Hemingway became Manager in 1900, and that in 1910 there were extensive alterations at the works, when plans which cost £83 were handed over to him. After the completion of the work, he declined to give them back. Then he became ill, left the service of the Company, and was succeeded by the present Manager (Mr. F. W. Oldfield), who should have been in possession of the plans. Mr. Hemingway died in the autumn of last year, and the defendant, when asked to return the plans, failed to do so. Mrs. Hemingway informed the Court that the only plan that had not been returned to the Company was of his own draughting. That one he gave to a friend to destroy. The Judge said that if the plan had been destroyed at the instigation of Mr. Hemingway, it was done from an improper motive. Judgment was given in favour of the Company, the understanding being that any damages awarded would be small; but the case was adjourned in order that duplicate plans might be produced by Mr. Gibbs, who drew them.

Another Reduction at Oldbury.—The Oldbury Urban District Council, at their May meeting, approved a recommendation of the Gas Committee that the price of gas be further reduced by 8d. per 1000 c.ft. to all consumers, to come into effect at once. This is the fourth reduction in price since September last; and the Chairman of the Gas Committee was congratulated by the Council on being able to recommend so substantial a further reduction.

Matlock Bath Gas Price.—The Chairman (Mr. A. W. Witham), at a meeting of the Matlock Bath Urban District Council, referred to a recommendation to reduce the price of gas by 4d. per 1000 c.ft., and said many people would no doubt be disappointed that the decrease was not more; but the undertaking had los £500 during the coal strike. The price of coal had increased 140 p.ct. since 1914; and labour was up 200 p.ct. Mr. Pritchard (the Chairman of the Gas Committee) stated that the gross profit for the year was £844; but after paying principal and interest, there was a deficit of £224, which considerably reduced the balance brought forward from the previous year. As, however, there had lately been some reduction in wages and materials, the Council had decided to give the consumers the benefit of the reduction proposed in the price of gas. The recommendation was adopted.

Whessoe Foundry and Engineering Company, Ltd.—The second annual report, to be submitted at the meeting to-day, states that the profit for the year to March 31, after making reserves for taxation, amounts to £55,268, against which has been charged £7333 depreciation, and £25,000 transferred to general reserve—leaving a net profit for the year of £22,935. With the amount brought forward, the sum available for distribution is £30,727; and out of this the Directors recommend a dividend of 10 p.ct. (free of income-tax), which will leave to be carried forward—subject to Directors' commission on profits—£10,727. The Directors say it will be observed that the reserve of £3445 appearing in last year's balance-sheet, which was in the nature of a capital reserve not available for distribution, has been applied in reduction of the book value of the land, buildings, fixed plant and machinery account. In view of the unsettled position of the engineering and allied industries, the Directors have thought it prudent to carry to reserve out of the year's profits the sum of £25,000 as a general reserve for equalization of dividends or other purposes. During the earlier part of the year under review, the works were well supplied with orders; but, in common with other engineering businesses, the industrial depression of the later months resulted in considerable contraction of work. As foreshadowed in the last report, the Company were in a position to meet the fall in market values without serious difficulty. The funds set free by the reduction of stocks and work in progress have been invested in short-dated Government securities, which can be readily realized for working capital as and when business expands. There are indications of improvement in the general industrial outlook, provided a satisfactory settlement is arrived at in connection with the dispute in the engineering industry.

MISCELLANEOUS NEWS.

GAS REGULATION ACT APPLICATIONS.

The following further notices have appeared in the "London Gazette" regarding applications to the Board of Trade for Orders under the Gas Regulation Act.

Plymouth Corporation (Devonport).

The maximum price now authorized in respect of the supply of gas by the undertakers is 4s. per 1000 c.ft.; and the price they have asked the Board of Trade to substitute for this is 1s. per therm. They have also asked the Board of Trade to authorize an additional maximum charge of 3d. per therm in respect of gas supplied by means of prepayment meters.

Shirebrook and District Gas Company.

The standard price now authorized in respect of the supply of gas by the undertakers is 5s. per 1000 c.ft.; and the price they have asked the Board of Trade to substitute for this is 1s. 7d. per therm.

Southwell District Gas Company.

The standard price now authorized in respect of the supply of gas by the undertakers is 3s. 10d. per 1000 c.ft.; and the price they have asked the Board of Trade to substitute for this is 1s. 9d. per therm.

Tuxford and District Gas Light and Coke Company.

The standard price now authorized in respect of the supply of gas by the undertakers is 3s. 9d. per 1000 c.ft.; and the price they have asked the Board of Trade to substitute for this is 1s. 9d. per therm.

DECLARATIONS OF CALORIFIC POWER.

Aberdare and Aberaman Consumers' Gas Company.—500 B.Th.U. (June 1.)

Dover Gas Company.—450 B.Th.U. (June 24.)

Dinnington and District Gas Company, Ltd.—475 B.Th.U., in place of 450 B.Th.U. now being supplied. (Sept. 30.)

GAS REGULATION ACT ORDERS.

There have been received from the Director of Gas Administration copies of the following further Orders made by the Board of Trade under section 1 of the Gas Regulation Act.

Alnwick Gas Company.

After the declared date, the standard price in respect of gas supplied by the undertakers shall be 15d. per therm.

For the purpose of ascertaining the authorized rate of dividend, any price charged per 1000 c.ft. before the declared date shall be rendered into the equivalent price per therm by dividing it by five-and-three-tenths.

After the declared date, "150 therms" shall be substituted for 30,000 c.ft. in section 64 (discount to certain consumers) of the Alnwick Gas Act, 1881. (May 20.)

Farnworth and Kearsley Gas Company.

As from the declared date, the maximum price in respect of gas supplied by the undertakers shall be 19·4d. per therm. (May 23.)

Portishead Gas Company, Ltd.

After the declared date: (1) The standard price in respect of gas supplied by the undertakers shall be 13·4d. per therm. (2) The price of 15·2d. per therm shall be substituted for the price of 5s. 3d. per 1000 c.ft. mentioned in section 29 (fixing price of gas with sliding-scale as to dividend) of the Portishead Gas Order, 1893.

For the purpose of ascertaining the authorized rate of dividend, any price charged per 1000 c.ft. before the declared date shall be rendered into the equivalent price per therm by dividing it by five-and-one half. (May 17.)

Price again Reduced at Oswaldtwistle.—Consumers at Oswaldtwistle have received notification that the price of gas will at the end of the present quarter be reduced to 3s. 4d. per 1000 c.ft., with a discount of 3d. for prompt payment. The reduction was agreed to following a statement by the Gas Manager, Mr. J. H. Davies, who has held his present position fifteen years, during which time he has reconstructed the works and effected many improvements. There was a reduction of 6d. last December. In 1912-15 gas was supplied at 2s. 6d. per 1000 c.ft.; and in 1916-17 there was an increase to 2s. 11½d.; in 1918, to 3s. 4d.; in 1919, to 3s. 9d.; and in 1920-21, to 4s. 6d.

Birmingham Efficiency Exhibition.—The Industrial and Commercial Efficiency Exhibition (promoted by the Birmingham Chamber of Commerce), at Bingley Hall, Birmingham, which was opened on Thursday last by the Lord Mayor, and will remain open until Saturday next, has claimed a good deal of attention in Midland business and industrial circles. The British Commercial Gas Association make an effective display of their advertising material; and the Birmingham Gas Department give practical demonstrations of the efficiencies of various types of gas-burners, while sections of other forms of gas appliances are on view with working models, &c., as well as gas fires, cookers, water-heaters, &c. The department also draw attention diagrammatically to the high efficiencies obtained in the distillation of coal in a gas-works, together with the resultant valuable bye-products which are recovered, as compared with the enormous wastage in burning of coal in a raw state. Messrs. Smith & Azouz, of Glasgow, feature gas lighters. "W.R." Patents, Ltd., of London, exhibit their CO_2 indicators and recorders.

CAPE TOWN AND DISTRICT GAS LIGHT AND COKE COMPANY, LTD.

A Further Increase in Dividend on the Ordinary Shares.

The Ordinary General Meeting of the Company was held last Wednesday, at the London Offices, Nos. 36 and 38, New Broad Street, E.C.—Mr. J. E. LILLEY in the chair.

The SECRETARY (Mr. R. W. Blackburn) read the notice convening the meeting, and the Auditors' report; and the Directors' report and the statement of accounts for the year ended Dec. 31 were taken as read.

The CHAIRMAN, in moving the adoption of the report and accounts and the payment of a dividend on the ordinary shares of 7 p.ct. in respect of the year, said that, with regard to the business of the past year, he might inform the shareholders that conditions were the same in Cape Town as in other parts of the world. That was to say, very great depression existed. This made its mark on the business to some small extent, as the demand for gas was not so great as in the two years immediately preceding. As a matter of fact, the quantity made was 16 million c.ft. less than in the previous year; but he was pleased to say that the amount sold was not so much smaller as this figure would indicate, the sales having been only 12 million c.ft. less. This showed that they had had some success in reducing the leakage or unaccounted-for gas. Of course, generally speaking, they were aiming to get a larger business; and as a usual thing they were not satisfied unless they secured some increase in sales every year. But it was a fact, really, that last year the smaller demand was not unwelcome to them, because they had had to wait such a long time for the new carbonizing plant. This lessening of demand had therefore rather eased the situation.

VERTICAL RETORTS AND COLONIAL COAL.

The old retorts which they had had to use in conjunction with their modern plant became less and less efficient every year—in fact, almost every month now. They ought to have been thrown out of use some time ago, as would have been the case could they have got the new plant delivered. This state of affairs rendered it very difficult to get proper results from their coal and keep the quality up to the desired standard. However, they had done the best they could in the circumstances. The Directors believed that the Contractors had done their very best to deliver the new plant. The Company's arrangement with them was that they should deliver all the materials, and should send out a skilled man to superintend the erection of the plant; and that the Company should themselves provide the labour necessary to carry out the work over there. They got the materials piecemeal for a considerable time; but they were all delivered before the end of last year. Therefore the work was by this time well in hand, and they were getting on with the erection as fast as possible. They were, of course, very anxious that the work should get on quickly; and the Board not only had weekly reports of its progress from their Engineer, but they also had photographs every week as well. Thus they could themselves get an idea at regular intervals of the progress that was being made. Therefore the Directors were satisfied that the work was not being unduly delayed. They had, however, had to get through all the heavy demands of last year without it, thereby suffering additional expense and great difficulties. With regard to the difficulty of keeping-up the quality of the gas, he might tell the shareholders that they had been using Colonial coal entirely. It was a fairly good coal; but it was not of high calorific value, and all authorities nowadays wanted a certain calorific standard. So to relieve themselves temporarily from this difficulty, they had made arrangements to send out some English coal. It was expensive to do this; but they felt it was a necessary course to take, because they were now at the beginning of the winter season over there, and so did not want to run any risks. A cargo of English coal was therefore going out, to be used with the South African coal; and they hoped this would tide them over their troubles. If they had used English coal, they would have had no difficulty in maintaining the calorific value; but it would have been very expensive, and, in addition, they knew that the authorities liked them to use local coal as far as they possibly could. The Directors also considered it was right that they should do so. He thought they might expect the new retorts to be ready by October. Of course, the winter season would be over by then; but they would nevertheless be very glad to have them in service. They found that vertical retorts were by far the best for carbonizing South African coal; and when they got these into operation, they would make all their coal gas by this system, and only add such a proportion of water gas as might be justifiable. With regard to coal, it had been very expensive during the past year—anything from 10s. to 15s. per ton more than in the year before; but, as he had reported a year ago, they had had to put up the price of gas a little. Thus, though the coal had been more expensive, they had come out at the end of the year with what he hoped would be regarded as a very good profit indeed. Residuals had not been such a good market as in the previous year. They had managed to sell them all, but had had to make concessions in price—more especially in regard to tar, for which they had previously been getting very good prices. During the past year they had had to reduce these prices very considerably, but just managed to keep themselves from being overloaded. At length, however, they had got on such terms with the local authorities as to secure an order for a considerable quantity of tar. They hoped it might suit the authorities to continue to order from the Company. Tar was, of course, used very much in connection with roads; but for this purpose they wanted dehydrated tar, with the lighter oils extracted as far as possible. There was some little difficulty in doing this, with a small undertaking like theirs.

DAMAGE TO METERS.

They had had one very troublesome matter to deal with, and that was with regard to the meters. He believed he had explained a year ago that there had been a serious shortage of water out there; and the Gas Company, in common with everybody else, were very strictly limited as to the quantity they might use. Water was, of course, employed for cleansing the gas; and if it was not cleansed of certain impurities in this way, these proved very injurious indeed to metal. Consequently as they could not, owing to this shortage of water, cleanse the gas in the desired manner, their meters suffered very badly. In some cases, they were eaten right through the metal; while in other instances the valves were seriously injured. This had involved them in great expense; but now he was pleased to say there was a better supply of water, and they had put in new washing plant. But up to the present time the meters had not all been either repaired or replaced by new ones. They still had difficulties, though nothing like the number of injured meters came in now as was the case some time ago. From nine to twelve months back, they were getting in ten meters every day; and the repairing staff were only able to deal with three meters per day. The Company bought large quantities of new meters, and shipped them as fast as they could. Of course, there had been many delays; but during last year better supplies were forthcoming. More meters had been dispatched last year than they had ever had to send out in any year before.

THE QUESTION OF FINANCE.

He did not propose to take them through the various items of the balance-sheet; but he would like to touch upon the question of finance, which the shareholders must realize had been one of very great importance to the Company during the past two years. The Directors ordered the present new carbonizing plant three years ago, and expected to have it delivered in 1921, though it was not so delivered. The estimated cost was £43,000; and this estimate was about right. In addition to the carbonizing plant, they had had to supply, as he had stated a year ago, new boilers, new condensers, and new washers. They had to find the money for these as well; and he might say that they had paid for everything as it was delivered all the way along. A sum of £12,000 towards these capital charges was paid in 1920; and during the past year £31,000 had been similarly paid. The position at the present time was that everything, including materials and labour, had been paid for up to date. By October, when they hoped to get the retorts finished, they would perhaps have spent another £3000 to £5000. They would also owe for a period of twelve months 10 p.ct. of the cost of the plant, which was money they would retain until they had assured themselves that the work was satisfactory. Thus with the exception of this 10 p.ct. retention money the shareholders might feel satisfied that during this year everything would have been paid for this new plant. He did not know whether the shareholders wondered how it had been done. The way in which the Directors had accomplished it was by getting loans from its bankers against investments, and further loans on the credit of the Company. They found that loans on the credit of the Company were forthcoming; and these existed at the present time. They were stated in the balance-sheet as £17,000 at the end of the year; while at the present time they amounted to £19,500. As regarded the greater part of them, the period for which they were fixed was up to the middle of July next. He had no doubt, however, that this period could be extended for such portions of the loans as they might desire to continue. Having found themselves in the position of being able to get the money in this way, the Board felt that it was much better than issuing new capital on such conditions as they would have had to issue it at any time during the past few years of stringency. They had, of course, debenture stock unissued which, if it had been issued, might perhaps have brought them in the necessary money; but it would have had to be on extravagant terms, which the Board had succeeded in avoiding. It would probably be necessary to approach the shareholders at some later date, when the Directors thought the time was suitable for the issuing of new capital, because the capital account was indebted largely to the revenue account. It had absorbed the reserve fund. The Board would apply to the shareholders when it was found necessary to issue new capital. As to the investments, many of the older shareholders knew that the Company had held these for a number of years, and, knowing this, they must be aware that the investments had suffered very great depreciation for some few years. They had been always ready to sell, in order to have the use of the money in the business; but until quite recently they had not had an opportunity of doing so without incurring a big loss. But the time at last came when they could sell them without a loss; and the Board seized the opportunity thus offered. This left them with money in hand to go on with at the present time without making any further appeal for capital.

EXCESS PROFITS DUTY.

The Directors had had yet another anxiety. He said "anxiety," because, of course, all things which involved large sums of money were an anxiety, even when one thought one ought not to pay them. The Company had had a large claim made upon them for Excess Profits Duty, amounting to no less than £17,000 odd. For some years no claim had been made upon them in respect of this matter; and then it was intimated to them that they would have to pay. The Directors felt that if the accounts were looked into thoroughly and thoroughly understood by the Inland Revenue Authorities, they would not have to pay any such claim. A great deal of labour had been expended on the accounts—different items being picked out for the various years. In the settlement of capital, the Inland Revenue Authorities wanted to go back even as far as the year 1901 to arrive at what their capital really was. The provisions of the Excess Profits Act required an estimate to be formed of what the capital was at the end of 1913; and, as he had said, this had been done, with the expenditure of much labour. The Directors recognized that the claim was made in good faith by the authorities, as far as they were concerned; and the matter had been dealt with courteously and openly. They put before the authorities certain points which, in their opinion, justified exemption from Excess Profits Duty. They had not yet heard that this was the opinion of the authorities, but had put forward such a strong case that they thought the authorities ought to concur. He did feel certain they could not possibly, in any case, substantiate a claim to anything like the amount mentioned, and that if they had to pay anything at all it could only be a very small sum. The Directors would strongly

hold-out for their rights in the matter, and he believed the authorities would be willing to be just in their dealings with them.

THE DIVIDEND.

The only other matter to which he wished to refer was the dividend. The Directors recommended 7 p.ct. on the ordinary shares; the dividend having already been paid on the preference shares. They thought the accounts would show that this dividend of 7 p.ct. had been well earned; and when it was paid, it would be with a reduction of only 3s. in the pound for income-tax, because they got an allowance from the Inland Revenue Authorities here in respect of the amount of tax they paid in Cape Town.

The Vice-Chairman (Mr. H. R. Savory) formally seconded the motion.

The Chairman, in answer to a question, said they had sold every one of their investments.

Mr. J. Jones said the report showed a profit of over £22,000. Out of this they had applied £6000 in writing-off depreciation on capital account—a very prudent and proper course to take. Then there was £3000 transferred to reserve, making the total of that account over £42,000. There was also a reserve account shown in the balance-sheet of £14,000 for plant renewals. This being so, and with such satisfactory results on the past year's working, he would like to know why the Directors only recommended the modest dividend of 7 p.ct.—a very conservative recommendation, especially in relation to the previous year's dividend, which was an increase of 2 p.ct. over the year before that, bringing it up from 4 to 6 p.ct. The profit earned in the year under review exceeded that of the previous year by over 50 p.ct. Would the Company in the near future revert to the payment of interim dividends on the ordinary shares?

Mr. E. Nicholls remarked that the Directors were very wise not to issue fresh capital at the present time. When they did so, he hoped the terms would not be too onerous. He took it that the new retorts would result in economies in working which would lead to greater profit. Did the depression in South Africa still remain as acute as it had been, or were there signs of it passing away? As an old shareholder, he felt they ought to congratulate the Chairman and Directors on having so successfully piloted the Company through very difficult times. In view of the possible Excess Profits Duty claim, it was wise to limit the dividend for this year to 7 p.ct.

The Chairman, referring to the suggestion that a larger dividend might be paid, said it must be quite evident to everybody that, in the circumstances which he had related, it would be altogether wrong to distribute a larger dividend than that which was recommended. Nobody would be more pleased than he if more could be paid, because he was by far the largest holder of ordinary shares in the Company. Originally the capital of the Company was made far too large for the amount of business done. They ought to put themselves in a safer position if possible, and gradually let the business grow up until it became more in proportion to the capital. It was the opinion of the Directors that they ought to write off £6000 for depreciation. The question of interim dividends had never been absent from the minds of the Board; but the shareholders must recognize how they had had to scheme to get money to carry along with during the past year. An interim dividend would be recommended whenever it could be done without sacrificing the best interests of the Company. It must also be kept in mind that the present price of gas was very high; and they did not want to keep it at that figure for a moment longer than was absolutely necessary. There was still very acute depression in Cape Town; but, at any rate, it did not seem to be any greater than it was last year. Up to now they had been fully keeping pace with last year's business. During the four months of this year that had already elapsed, they were about 1 million c.ft. up on the corresponding period of last year.

The report and accounts were then adopted.

Proposed by the Chairman, and seconded by Mr. R. A. Fairclough, the retiring Director (Mr. H. R. Savory) was re-elected; and the Auditors (Messrs. Kemp, Chatteris, Nichols, Sendell, & Co.) were also re-appointed.

A Gratifying Acknowledgment.

Mr. Jones proposed a hearty vote of thanks to the Chairman, Directors, and officers of the Company; and to this he attached the following resolution that:

> "In view of the difficult year the Company has passed through and the assiduous attention given to its affairs by the Directors, the sum of £500 be voted to them as a special grant, as a mark of appreciation of their services in respect of the year 1921."

Speaking as one who had had extensive business relations with South Africa for many years, he said it was common knowledge that last year was one of the most difficult in which to conduct business; and the Directors and officials were therefore all the more heartily to be congratulated upon the excellent showing made by these accounts.

Mr. Harding seconded this.

Mr. Blackburn, addressing the meeting as a shareholder, and not in his official capacity, said there were two points he would like to mention in support of the proposition that had been put forward. The first was that for several years while the preference dividends were in arrear the Directors voluntarily sacrificed their remuneration to the extent of some £1500. The second point was that he had been associated with the Chairman for over twenty years, and could testify to the wonderful keenness with which he looked after the affairs of the Company. It was greatly owing to the Chairman's unremitting attention to the business over a long series of years—in bad years as well as in good—that the position of the Company was what they had heard that day, with such excellent prospects for the future.

Mr. Nicholls also heartily supported the resolution and voiced the indebtedness of the shareholders to the Chairman and Directors.

After the proposition had been unanimously agreed to,

The Chairman said this had come as a very great surprise to him. The Board had recognized the good work of the officials all round, and had given them increases. Really, they were surrounded by most loyal officials. On his own behalf and that of his colleagues, he thanked the shareholders most heartily for their generous vote.

MONTEVIDEO GAS AND DRY DOCK COMPANY, LTD.

A Heavy Loss on Exchange Rates—Confidence in the Future.

The Fiftieth Ordinary General Meeting of the Company was held last Wednesday at Dashwood House, New Broad Street, E.C.—Mr. Charles Hunt in the chair.

The Secretary (Mr. Henry Kearns) read the notice convening the meeting, and the minutes of the last meeting were taken as read and signed.

The Chairman desired, before proceeding with the business of the meeting, to place on record their sympathy at the loss of *S.S. Egypt*.

The Secretary then read the Auditors' certificate; and the Directors' report and the statement of accounts were taken as read.

The Chairman, in moving their adoption, reminded the proprietors that at the meeting last year he had commented upon the uncertainty of the rates of foreign exchanges as introducing an element of instability in a business like theirs, depending upon the receipt of remittances from abroad. He hardly expected, however, to have so soon to report such a serious loss as was shown by the accounts of no less than £24,473 on remittances sent to this country, as compared with an actual profit made during the previous year of £27,475—the two sums making together a loss of £51,948 in comparison with 1920. Having regard to such fluctuating conditions, it was not surprising that there should be variations in the rate of dividend possible; and he thought the prevailing feeling would be one of thankfulness that they had seen their way to recommend payment of as much as 4 p.ct. per annum, tax free, instead of a lower amount—if indeed any at all. The results of the year had, however, enabled them to avoid that calamity; but it was to be regretted that they were unable to distribute a higher dividend at this, the fiftieth, annual meeting. But in making the recommendation, the Board took the view that probably the worst had been experienced of these fluctuations of exchange, which were due to disturbed industrial conditions throughout the world. At the same time, he was able to assure the proprietors that there was nothing wrong with either branch of their industry. Regarding the dock and workshops, it could hardly be expected that there should be any improvement over the trading of recent years; but they were fully satisfied with the results. At the moment interest was largely centred on the gas sales branch, which continued to make satisfactory progress, and the capacity of which for growth seemed practically unlimited. The present population of Montevideo was approximately 380,000, which afforded a fine field for the development of gas consumption for heating, cooking, and industrial purposes. This was increasing satisfactorily, the additional consumption last year having been almost double that of the previous year, and this rate continuing to be fairly maintained. In fact, it became necessary during the year under review to make further provision of manufacturing and distributing plant to meet the ever-growing demand. This was included in the £18,969 spent under the heading of capital account. Fortunately, there was now a more reasonable prospect of obtaining further plant at something much nearer what might be called normal prices, than there had been for some years. It was very satisfactory, moreover, to realize that after a prolonged period of unsettlement, ending last year with a coal stoppage of unprecedented duration, the prices of coal and freights were returning to the figures to which they had for so long been strangers. This, however, reacted upon the revenue derived from residuals, which showed a substantial decrease compared with that of the previous year. Wages, also, were higher by what might be termed a substantial amount of about £10,000, owing to the eight-hour day Law to which all must now conform. Gas consumers, however, might be sure that every prospect of being able to supply cheaper gas was welcomed by the Company. Several years ago they proposed to form a Superannuation Fund for their staff both here and at Montevideo, and in fact made a commencement by setting aside a contribution to such a fund of £5000. At that very time, however, the Government of Uruguay had in view the formation of such a fund to be formed by the joint contributions of employers and employees; and they had naturally held their hands to see what came of it. This eventually passed into Law, but only as regards the officials of public services like their gas staff. Efforts were, however, made to widen the scope of the scheme, in which case the dock and workshops officials would have been included. These efforts had, however, so far failed, and the Directors therefore felt it incumbent upon them to do for those officials (so far as was practicable) that which the Government scheme had done for the gas-works officials and workmen. Steps were being taken accordingly. Under the Government scheme, several of the officials, including their Chief Gas Engineer, Mr. Thomas, availed themselves at the end of last year of the opportunity to retire from the service of the Company; and they all carried with them the best wishes of the Directors for long enjoyment of their well-earned leisure. The Directors, after careful consideration, had appointed Mr. J. N. Whyte, late Engineer of the San Paulo Gas Company, to be Deputy General Manager at Montevideo. Mr. Whyte had had considerable experience as a gas engineer at San Paulo, and the idea was that he would in addition acquire experience of dock-yard work, so as to take Mr. Lane's place as General Manager at no distant date, so as to enable that gentleman to come home and take his well-earned rest, or as much of it as he could consistent with his occupation of a seat on the Board. They would greatly welcome his assistance here, and he (the Chairman) felt sure that there were some stockholders who remembered Mr. Lane's going out to Montevideo in the year 1890, and would welcome him home again in the capacity of Director.

Mr. John Mews, LL.D., seconded the motion for the adoption of the report and accounts.

Mr. B. N. Cooper (after congratulating the Board) asked, with regard to the first item in the revenue account, how much was from sales of gas and how much from the dock department; what were the rates for gas consumption; and how they compared with previous years?

Mr. C. C. Mallet asked permission to make a few remarks, point-

ing out that his knowledge of the River Plate for forty years might be of benefit to the proprietors. He could emphasize the remarks the Chairman had made as to the growth of Montevideo. It was going ahead; and the shareholders could be quite confident in leaving their money in the Company. Their losses through exchange represented 4 or 5 p.ct. of their capital; but this would come right. With reference to the Corporation tax, this was very largely felt—it was an insidious and unjust tax; and he considered that shareholders should everywhere protest against it.

The CHAIRMAN, replying to the above questions, said he much appreciated the remarks made as to the Corporation tax, and would join in any opposition to it. The revenue from the gas department amounted to £202,000, and from the dock £67,000. The price of gas amounted to 10s. 10d. per 1000 c.ft., and had remained the same since 1916.

The resolution was then carried unanimously.

Proposed by the CHAIRMAN, and seconded by Mr. FRANK H. JONES, a dividend was declared, payable on June 1, of 2 p.ct. free of income-tax, making with the interim dividend a total of 4 p.ct. for the year.

The retiring Directors (Mr. Frank Jones and Mr. Edgar Horne) were then re-elected on the motion of the CHAIRMAN, seconded by Mr. MEWS; Mr. Hunt saying they were sorry Mr. Horne was not with them, as he had had to go to America. Both gentlemen, he considered, were indispensable—Mr. Horne from his enormous business capacity, and Mr. Jones from his unique knowledge of the intricacies of gas supply.

The Auditors (Sir Lawrence Halsey and Mr. W. C. Sneath) were then unanimously re-elected, on the proposition of Mr. MALLET, seconded by Mr. A. J. KINGDON.

Mr. JONES, in thanking the proprietors for his and Mr. Horne's re-election, remarked that the dividend declared had been properly earned, and not squeezed out.

Thereafter, Mr. MALLET proposed a hearty vote of thanks to the Board and the Company's staff. He had recently seen Mr. Lane (the General Manager in Montevideo), and could assure them of his devotion to the Company. They would be glad to welcome him in this country.

The motion was supported by Mr. COOPER, and carried unanimously.

The CHAIRMAN'S acknowledgment concluded the proceedings.

OTTOMAN GAS COMPANY.

The Situation Improving.

The Ordinary General Meeting of the Company was held on Tuesday of last week, at the London Offices, Nos. 59 and 60, Gracechurch Street, E.C.—Colonel STEPHENSON R. CLARKE, C.B., in the chair.

The SECRETARY (Mr. C. J. Daun) read the notice convening the meeting; and the report and accounts for the year ended Dec. 31 were taken as read. The former stated that the supply of gas to the town of Smyrna is still being maintained, though the Directors regretted having to report a loss during the past twelve months' working of the Company of £15,517. The depreciation of Turkish currency and the unsettled political situation in Asia Minor continue seriously to affect the Company. The claim against the Imperial Ottoman Government for £53,476 is still unsatisfied.

The CHAIRMAN, in moving the adoption of the report and accounts, said he regretted to have to announce a loss, for the twelve months ended Dec. 31 last, of £15,517, of which the exchange was responsible for £6793; making a total loss in exchange during the past three years of £43,136. He assured the shareholders that it was a very great disappointment to the Directors to have to present such heart-breaking figures. When they met this time last year (when annual accounts were presented for the first time since peace was declared), they had hoped that, under Greek rule at Smyrna, the Company would experience during 1921 the commencement of a period of profitable trading; and they were encouraged further by the hope that, as soon as the strike of miners in England was over, they would be able to procure coals at a very reasonable price. This latter event had occurred; but, through unforeseen circumstances resulting from the Greek occupation of Smyrna, the expectation of profitable trading had been unfulfilled. In addition to the loss by exchange (which was not wholly unexpected), they had had to suffer a terrible loss in leakage of gas This had been largely occasioned by the heavy transport of the Greek army of occupation. The roads in Smyrna had not a very enduring surface; and the heavy military lorries, &c., had shaken the joints of the pipes in a most disastrous way. At one time, the loss of gas reached 39 p.ct. of the make. To lessen this, it had been necessary to incur great expense in relaying a large portion of the mains. As a result, they had succeeded in reducing this leakage very considerably; but the work would have to be continued. Another source of loss had been the thefts of gas; and it was with much regret that the Directors had to complain of the great delay and difficulty in obtaining justice. They regretted also that the municipal authorities had declined to re-inaugurate the public lighting by gas, though under the terms of the Company's concession they were bound to do so. The authorities alleged that they had no funds at their disposal; but in one case at least, in Cordelio, they had installed electric lighting, which was contrary to the Company's concession. Another serious complaint the Board had to make was that the Greek military authorities were worse than dilatory in paying their accounts. This, and the large amount owing for reparations, had made the Company short of working capital. The present position, however, was a little better than it was on Jan. 1; the estimated working for the quarter ended March 31 showing a slight profit, an increased sale of gas, and a substantial decrease in the leakage.

Mr. STRACHAN C. CLARKE formally seconded the motion.

Mr. R. L. ANDREWS said he presumed the authorities the Chairman had referred to were the Greek authorities, and that, as regarded the public lighting, the income would be entirely from them. Also that the large leakage of gas, and everything of this kind, was owing to the Greeks being there—the Company had not the Turkish authorities in any shape or form to deal with.

Mr. F. W. BROTHERS asked about the district in which electric light had been installed. Was it likely to extend to Smyrna proper?

The CHAIRMAN said he hoped not. The place to which he had alluded was a small suburb. There had, however, been some small private installations put down in Smyrna which had been distributing electric light contrary to the terms of the Company's concession.

The report and accounts were then adopted.

The CHAIRMAN proposed the re-election of the retiring Directors, Mr. A. F. Phillips and Major J. C. Daniell, O.B.E., both of whom, he remarked, were exceedingly valuable members of the Board.

Mr. A. M. PADDON, in seconding, said it was regrettable that a Company of this kind could not get the true result of the services of these gentlemen. He would like the proprietors to realize that there were certain things the Board could control, and others which they could not. The whole of the situation, so far as it was against the Company to-day, was purely on account of its political character. With the political part of the situation removed, nothing would stand in the way of the Company.

The resolution was carried; and on the proposition of Mr. R. L. ANDREWS, seconded by Mr. BROTHERS, the Auditors (Messrs. T. H. Cooke and F. W. Church, F.C.I.S.) were re-appointed.

Mr. ANDREWS proposed a hearty vote of thanks to the Chairman, Directors, Engineer and Manager, Secretary, and other officers of the Company. He said that he knew Smyrna and all about it; and he firmly believed that things would come right.

Mr. BROTHERS seconded the motion, which was supported by Mr. A. W. OKE, and heartily passed.

The CHAIRMAN, in acknowledgment, admitted that all connected with the Company had had a very anxious time; but just now, perhaps, he felt a little bit less anxious than hitherto. The accounts for the past quarter showed a profit which was estimated at round about £900, and they were getting coals at 42s. per ton, instead of about £4 14s., as before. Of course, with cheaper coal there was more difficulty in getting rid of coke; but still there was something to the good.

BAHIA BLANCA GAS COMPANY, LTD.

The Fifteenth Ordinary General Meeting of the Company was held last Wednesday, at the London Offices, No. 1, East India Avenue, E.C.—Mr. J. M. MACMORRAN (the Chairman) presiding.

The CHAIRMAN, in moving the adoption of the report [*ante*, p. 448] and the statement of accounts, said the shareholders would see from the revenue account that there had been a loss for the year of £1474, thereby making the total deficit to the date of the account (Dec. 31) £44,331. The loss on working was due to factors beyond the control of the Board. Yet such factors, compared with recent years, were more amenable in 1921; and the actual working loss was the lowest for the last five years. Compared with 1920, the reduced amount of loss was attributable to the increased tariffs charged, though with lower labour costs and cheaper fuel there had also been a reduction in the prime cost of gas. Comparing the revenue account with that of 1920, expenditure on the maintenance of meters, services, and mains had increased. A certain amount of expenditure of this sort was unavoidable; and the increase in 1921 was accounted for by the fact that a very thorough revision of the main and service pipes had been in progress. On the other side of the revenue account, the receipts from gas sales had increased slightly. The erection of the new gas-generator was commenced in Bahia Blanca during February; and the Board had recently heard by cable that the brickwork was completed. It was expected that the plant would be working by about the middle of June. As was to an extent anticipated, higher tariffs had led to a slightly reduced consumption, though it was probable that some of the decrease was due to the bad business conditions prevailing in Bahia Blanca. Nevertheless, the Directors were of the opinion that, with conditions as they had been, this policy was the correct one to adopt at that time, because the increased rates had at least reduced the loss during the period under review. Now, however, there was really a prospect of fuel at comparatively reasonable prices; and the Board, after consultation with their very able Manager in Bahia Blanca, had decided upon a different course of action. As from June 1 next, they would increase the calorific value of the gas supplied, and at the same time reduce the price charged to private consumers from 30c. per cubic metre to about 25c. In addition, the Manager had been making experiments with various kinds of burners, with the result that a new type had been decided upon; and the existing stoves would as soon as possible be converted to use these burners. The shareholders would thus see that, in spite of the great difficulties with which the Company were still faced, they were endeavouring to give a highly efficient service at a reasonably low cost; and the Directors were hoping for an increase in business as a result of these efforts. Generally speaking, conditions in Argentina were very bad; and this was especially the case in Bahia Blanca, which relied entirely on agriculture and cattle raising for its prosperity. The prospects for the present crop of cereals were considered to be satisfactory. Developments in connection with Argentine oil might before long render Bahia Blanca at least partly independent of harvest and cattle prices, though it must be remembered that, while such developments might bring prosperity to the town, they would also bring competition to the Company in the shape of cheap oil. The shareholders might be interested to hear that a proposal was afoot to construct, in conjunction with the Chilian Government, two new railway crossings of the Andes. By the one it was proposed to connect the town of Salta with the Chilian port of Antofagasta, following roughly the ancient Inca highway through the mountains; and by the other it was proposed to connect Bahia Blanca with the port of Valdivia, in Chile. It was stated that the latter would have the advantage, not possessed of the northerly crossing, of being open to traffic throughout the year. If this project materialized, it might very possibly have the effect of making Bahia Blanca an important terminal port. As in previous years, he could not refrain from making a reference to the very excellent work performed

during the year by Mr. A. M. Hunter, their Manager in Bahia Blanca. The year 1921 saw no cessation of the Company's difficulties, and accordingly Mr. Hunter had had one trouble after another with which to contend. It was difficult for them in this country to realize the position of one who was forced by circumstance to carry on without even the possibility of consulting a technical colleague with regard to knotty points—though it must be added that the Company had not suffered on this score. The staff in Bahia Blanca had also worked loyally and well; and it was with great pleasure that he placed on record this real expression of appreciation of the work performed by Mr. Hunter and his assistants.

Subsequent to the adoption of the report, the retiring Directors (Messrs. P. A. Cooper and F. G. Cockey) were re-elected, and the proceedings terminated with a hearty vote of thanks to the staffs in London and Bahia Blanca.

BRITISH COMMERCIAL GAS ASSOCIATION.

Report of the Executive Committee presented to the General Committee on Wednesday, May 17, 1922.

FINANCE.

A—Statement of Accounts.

In accordance with the resolution adopted at the last meeting of the General Committee, the financial year of the Association now closes on March 31, and a balance-sheet in respect of the seven months ended March 31, 1922, was presented for the consideration of the Committee.

The accounts serve to emphasize the obvious financial difficulty under which the Association continues to conduct its work—namely, the lack of working capital. The carrying of a large and varied stock of literature and the giving of credit in respect of literature, &c., purchased by members, together absorb a large amount of money. This prevents the punctual settlement of accounts; but the situation would be eased if undertakings' subscriptions were paid regularly as early as possible in the financial year. Members are, therefore, urged to arrange for payment of their undertaking's subscription for the year ended March 31, 1923, at the earliest possible date.

B—New Subscribers.

The Executive have pleasure in reporting that the following additional undertakings have become subscribers since the last report:

Eastern District—
Chelmsford.
Huntingdon.

Midland District—
Atherstone.
Droitwich.
Malvern.
Market Drayton.
Raunds.
Stoke-on-Trent Corporation.
Whetstone.
Wollaston.

Scotland—
Melrose.
Musselburgh.
Peebles.
Polmont.
West Calder.

South Western District—
Martock.

Manchester District—
Beighton.
Bollington.
Bury.
Earby and Thornton.
Ilkley.
Normanton.
Skipton.
Stalybridge.
Sutton and Hooton.

Northern District—
Filey.
Redcar.
Sherburn and South Milford.
Wooler.

Southern District—
Deal.
Elstree.

Wales—
Abercarn.
Monmouth.
Risca.

The number of subscribing undertakings is now 746, representing 84 p.ct. of the gas made in the United Kingdom.

DISTRICT CONFERENCES.

The District Conferences arranged for the Southern, Manchester (Lancashire and Yorkshire Sections), and Midland Districts have been held in Southampton, Blackburn, Bradford, and Coventry respectively, and were attended by considerable success. The meetings were well attended by the Chairman, Directors, Members of Committees, and chief Executive Officers of gas undertakings in the districts, and interesting discussions of the papers took place. Apart from the value of the conferences from the point of view of gas officials, the programmes were arranged to interest the public, who were invited to the public sessions of the conferences.

A special feature of the conferences has been the active co-operation of Medical Officers of Health. At the meetings at Blackburn and Bradford valuable contributions to the programme were made by Dr. Daley and Dr. Buchan.

The Scottish District Conference proposed to be held in Dundee has been postponed until the autumn, when it will be held in conjunction with an Ideal Homes Exhibition. As already reported, it has been arranged to hold conferences in Wales and the Northern District in the autumn.

CHILDREN'S FAIRY GAS COMPETITION.

The Executive desire to urge upon all members the desirability for, and value of, co-operation in this and similar educational propaganda, the cumulative result of which is difficult to estimate, though it may be stated without hesitation that the more widespread the campaign, the greater the ultimate practical results to the industry as a whole.

A special feature of the competition was the very large number of entries received from Glasgow. The Corporation Gas Department obtained the Education Committee's sanction to the competition being run with the co-operation of the school teachers.

Local prizes were awarded by Glasgow in addition to the national prizes; and a special prize distribution was arranged at the Technical College—Lord Provost Thomas Paxton presiding.

As a result of this enterprise on the part of the Corporation Gas Department, the education authorities, most of the school teachers, and over 8000 families were directly interested in gas through the competition.

POSTER COMPETITION.

As a result of the poor standard of work submitted by the competitors in the preliminary stage of this competition, the Executive decided to extend the closing date until March 31. This was done partly to give competitors further opportunity of submitting specimens of their work, and partly to afford a chance for further advertising the competition among artists.

The entries since received were exhibited in the Board Room; and a Committee of Judges, composed of the London members of the Executive Committee, a professional artist (Mr. Fred Taylor), and the officials of the Association, examined the designs with a view to awarding the prize offered. The Judges reported to the Executive with regret that the designs submitted were little, if at all, better than those previously submitted, and that they were unanimously of the opinion that no design of sufficient merit was submitted to warrant the award of the prize of £100. It is apparent that professional poster artists are not prepared to submit work on a competitive basis.

DISTRICT PUBLICITY.

Proposals for the district publicity for the ensuing year are being circulated to members of the General Committee for each district respectively for approval, and a campaign will be commenced directly these proposals have been considered and adopted, with any amendments desired by the districts.

The Executive desire to call the attention of members (1) to the need for local publicity campaigns being organized to supplement and complement the Association's National and District Publicity; and (2) to the services which the Association has provided for the assistance of members to that end. The gradual trade revival, which is passing from the theoretical to the practical stage, is to a certain extent reflected in the increased demand for the Association's literature, &c.; and in fostering this revival advertising in all its phases can, and does, play an important part.

Steps are being taken to bring prominently to the notice of members the many ways in which the Association can be of service in this connection, particularly in regard to the preparation of copy and the supply of blocks for the advertisements, and the varied selection of literature dealing with all phases of gas service. Members are urged to give this subject their serious consideration. The officers of the Association will at all times be pleased to hear from members and suggest plans of campaign, &c.

EDUCATIONAL PROPAGANDA.

The Executive are pleased to report that the first edition of 5000 copies of the volume of Teachers' Notes for Lessons is being exhausted rapidly. The book has been taken up with enthusiasm by members, many of whom have obtained the official sanction of the local education authorities for distribution of the book in schools. Members who have not yet ordered copies of the book for distribution are urged to do so, as, owing to the heavy cost of production, it will not be possible to reprint for some considerable time.

GAS-FIRES IN HOTELS AND BOARDING HOUSES.

In accordance with the wishes of members co-operating, the campaign for developing the use of gas-fires in hotels and boarding houses will be run either by the local undertakings direct or for them (at their expense) from headquarters, as managers may choose. There is every reason to hope, from the number of undertakings who have replied to the circulars issued, that the campaign will prove successful.

GAS-FIRED BAKERS' OVENS.

A report has been received from one of the Association's technical representatives with regard to experiments conducted to ascertain the practicability of the conversion of solid fuel fired ovens to gas. It is to be regretted that, so far as the very large number of small bakers is concerned, the advantages of gaseous fuel with regard to cleanliness, convenience, &c., are not of sufficient importance to balance the heavier fuel costs. This particular side of the subject will be watched, and any new developments reported.

MEMBERS' CO-OPERATION IN CONNECTION WITH THE PREPARATION OF PUBLICITY MATERIAL.

The Executive desire to place on record their appreciation of the assistance of many members in connection with the publication of the Association's publicity material, particularly "A Thousand and One Uses for Gas." They realize the amount of trouble that is often involved in obtaining photographs of installations and data as to working results; but the material so obtained is of the utmost value to the headquarters staff in producing effective booklets.

The Executive desire to appeal to all members to co operate actively in this connection, and to ask that up-to-date information with regard to modern installations of gas appliances shall be sent to headquarters as opportunity arises.

EXHIBITIONS.

The Executive have pleasure in drawing the attention of members to several important exhibitions held in different parts of the country, in which gas exhibits have been arranged by subscribers. Among the more important may be mentioned the Ideal Home Exhibition at Olympia, at which the Metropolitan Companies had a joint exhibit; Birmingham, where a series of exhibitions is now running at which the City of Birmingham Gas Department have an exhibit; and the Bakers' Exhibition at Glasgow, at which the Corporation Gas Department were showing, and organized a most popular cake-baking competition open to the trade and to housewives.

Forthcoming exhibitions in which the gas industry will be represented

are the Women's Exhibition at Olympia, where the Metropolitan Companies will be having a joint exhibit; the British Medical Association Annual Exhibition at Glasgow, where the Corporation will be represented; and the Royal Sanitary Institute Congress and Exhibition at Bournemouth, where this Association and the Bournemouth Company will co-operate in the representation of gas on Smoke Abatement lines.

The enterprise shown by members at these exhibitions has a wide-spread beneficial effect, because visitors to them are drawn from all parts of the country.

(Signed) F. W. GOODENOUGH,
Chairman.

GAS-MANTLES AND THE SAFEGUARDING OF INDUSTRIES ACT.

Final Decision of the Referee.

The final decision of Mr. Cyril Atkinson, K.C., the Referee under Part I. of the Safeguarding of Industries Act, in regard to the complaint that gas-mantles were improperly excluded from the list of dutiable articles issued by the Board of Trade—following the judgment by the Divisional Court upon points of law raised by the British gas-mantle manufacturers—has been given in the following terms:

I am quite satisfied that it is my duty to give effect to the view I had formed when I was asked to state a case—viz., that a mechanical aggregate of two dutiable substances was itself liable to duty. The complaint was that gas-mantles were improperly excluded from the list; and in the statement of their case, the complainants asked only that gas-mantles should be included. But quite early in the hearing it was clear that the question whether mechanical aggregates of dutiable substances were themselves dutiable was the first point to be determined. The complainants said they were, and on this contention based their demand for the inclusion of mantles. It was quite clear that a possible result was the inclusion of the mechanical aggregate as an ingredient of a gas-mantle, even though the mantle itself could not be included. The question was in terms raised in the counter-statement of the Board of Trade.

Evidence was called by the Board of Trade to the effect that the invariable practice of the Customs Authorities was to charge a duty on the value of the dutiable ingredient. Mr. Hunter Gray, K.C. (for the National Gas Council), agreed that to the extent that there was thorium oxide and cerium oxide in the mantle these two bodies were covered by the words "compounds of thorium and cerium." He took the point that this was not before me; but later both he and Mr. Whitehead (for the Board of Trade) said that, though the complaint was limited strictly to one issue, if I desired to go outside it, and it was within the terms of my appointment, they made no objection on the question of form. Finally Mr. Whitehead expressly invited me, as a matter of construction, to say that the schedule did not cover mixtures of the several compounds mentioned.

It seemed to me quite impossible to say that the question whether mechanical aggregates of the oxides or of the nitrates of thorium and cerium was not properly before me. I am inclined to think that it was expressly covered by the complaint that gas-mantles were wrongly excluded from the list. If a gas-mantle is liable to duty, even in respect of an ingredient, I think the total exclusion is wrong. If the point was not covered by the notice of objection, the complainants had only to give another notice. The three months had not expired; and if the Board of Trade and Mr. Hunter Gray had persisted in their objection, and not taken the course they, in fact, took, I am satisfied that the requisite notice would have been given.

I therefore decide that the phrase "compounds of thorium, cerium, &c.," includes mechanical aggregates of oxides of thorium and cerium and of nitrates of thorium and cerium; and I award that the list be amended by including therein "Mechanical aggregates of oxide of thorium and oxide of cerium and of nitrate of thorium and nitrate of cerium, being ingredients of incandescent gas-mantles." I also award that the complainants pay the costs of the Board of Trade and of the National Gas Council of the special case, but not including any costs of any hearing before me.

REDUCED GAS CONSUMPTION IN BIRMINGHAM.

Last year there was, according to the accounts of the Birmingham Gas Committee, a decrease of 1470 million c.ft. of gas, or 12 p.ct., in the consumption. New services laid increased by 454; but there was some reduction in the cooking and heating stoves sold. Prepayment customers numbered 103,363, an increase of 713. The total expenditure on the undertaking was £2,993,028; and £1,278,760 of this had been redeemed. The department carbonized 629,187 tons of coal, against 860,626 tons the previous year; and not since 1911-12 had the coal consumption been so small. The consumption of gas oil showed a great increase. The sale of gas was the smallest since 1914-15—10,264 million c.ft. Coke and breeze realized only £518,396, against £936,943 in 1920-1; while not since 1896-7 had so small an amount as £28,095 been received for ammoniacal liquor. The amount of coke made was 300,193 tons (243,254 tons sold); breeze, 75,217 tons (65,201 tons sold); tar, 7,327,119 gallons (7,406,344 gallons sold); and ammoniacal liquor 25,451,291 gallons (26,021,287 gallons sold).

Considerable progress has been made with the construction of the new carbonizing plant at the Nechells Gas-Works; and it is anticipated that two ranges of the new Woodall-Duckham vertical retorts will be completed in August. This is, however, contingent on the early settlement of the dispute in the engineering trades, as the present lock-out is holding-up some sections of the work. The two other ranges will, it is hoped, be completed at the end of the present year.

GAS PRICES IN BIRMINGHAM.

Justification for Differential Rating.

The Birmingham Gas Committee, in a statement to the City Council, say that they were recently asked to report on the possibility of narrowing the present margin between prices charged to large and small consumers.

In a lengthy and reasoned memorandum, they urge that there is every justification for this differential rating, and point out that, after midsummer, 1915, the price to large consumers was advanced more rapidly than to the small ones. The justification for granting lower rates for gas supplied for power and industrial heating purposes was twofold. There was, first, the great advantage gained by the department in having a regular day load, summer and winter alike, such as was provided by consumers who took gas for these purposes. The second and more important factor which operated in the minds of the Committee when dealing with the question was that of competition. The department had for a long time past had very serious competition with electricity for power purposes; and it was pointed out that the Birmingham Electricity Supply Committee had been authorized for many years past to charge much lower prices to manufacturers than to the ordinary users of electricity. This applied particularly to those taking high-tension current, in which case the price to-day to large users was a little over 1d. per unit, as compared with the top rate for low-tension current of 6d. per unit. The justification for this had always been the necessity for obtaining a day load. That was just as important from the point of view of the gas undertaking, as without it storage accommodation greatly in excess of the present would have to be provided. There was also the factor of competition from oil furnaces and producer-gas plant. Several large consumers had already been lost owing to this competition.

The Gas Committee added that they were confident that, unless manufacturers were encouraged to use town gas, there was grave risk of losing a very large percentage, if not the whole, of the present manufacturing load, with the consequential increase in the cost of production and distribution. If gas used for manufacturing purposes were sold at the same price as to ordinary small consumers, it would only enable a reduction of 1⅜d. per 1000 c.ft. to be made in the charge to small consumers; while if the whole of the manufacturing load were lost, there would be an increase of 7d. per 1000 c.ft. for the remaining consumers. The Committee felt very strongly that, bearing in mind the fact that the supply of light, heat, and power could not to-day be considered the monopoly of the gas undertaking—but that very severe competition was being met with, which was likely to be even more intense in future—it was advisable that the City Council should not depart from the method of charge which had been so successful. In meeting competition, and retaining the large consumer, the smaller user had benefited considerably; and the Committee were of opinion that nothing should be done to handicap the department in its efforts to retain its business. It was the intention of the Committee gradually to restore the comparative positions of the different classes of consumers; and in future revisions of prices (and it was hoped the next would take place as from the September reading of the meters), the difference which apparently existed in the present scale would be narrowed, so that the percentage increases over 1915 would become more nearly equalized.

TRADE NOTES.

Whessoe Plant.

An excellent aeroplane view of their extensive works at Darlington appears on the wrapper of a booklet just issued by the Whessoe Foundry and Engineering Company, Ltd. The object of this booklet is to convey—which it certainly does—in handy form for reference an idea of the productions in which the Company specialize. It comprises a selection of some two dozen from a wide range of photographic subjects illustrating various kinds of work actually executed by the firm. Beginning with one of those huge floating constructions which during the war were called "mystery ships," there is next a three-lift 6 million c.ft. gasholder erected for the Newcastle and Gateshead Gas Company, and a 1 million c.ft. three-lift holder in steel tank supplied to the Tokio Gas Company. These are followed by water-tube condensers, tower-scrubbers, purifiers, and "Whessoe" rotary washer-scrubbers. As to the last-named, the photograph is of two of the many machines supplied to the Gas Light and Coke Company at Beckton. They have a nominal combined capacity of 15 million c.ft. per day, but are stated to have dealt effectively with twice this quantity of gas per day. The aggregate capacity of "Whessoe" machines supplied to the Gas Light and Coke Company and the South Metropolitan Gas Company alone is 140 million c.ft. daily. The various other photographs cannot be detailed here; suffice it to say that they do embrace a very wide range indeed of constructional work. The Whessoe Foundry has an authenticated and unbroken career dating back to 1790—in fact, the foundry assisted in the construction of some of the earliest locomotives.

Further Reduction in Price at Hornsey.—The price of gas supplied by the Hornsey Gas Company will be reduced from 11d. to 10d. per therm from the date of the reading of the meters for the forthcoming June quarter.

Gas Prices in Scotland.—It is anticipated that another reduction will be made in the charge for Edinburgh gas. Some time ago 8d. per 1000 c.ft. was taken off; and the next reduction will probably be 6d. There has been a fall in the price of coal, a lowering of wages, and also the effecting of other economies. A reduction in the price of gas is being made at Cumnock by 10d., to 7s. 1d. per 1000 c.ft. Arbroath gas is being reduced 5d. to 3s. 9d. per 1000 c.ft. Provision is also being made for the payment of a deficit of over £5000. At Lockerbie, the reduction is 10d., to 6s. 8d. per 1000 c.ft.

ASSOCIATION OF ENGINEERS-IN-CHARGE.

Twenty-Second Annual Dinner.

A large party, thoroughly representative of the engineering profession, sat down in the Venetian Chamber of the Holborn Restaurant last Saturday evening, on the occasion of the twenty-second annual dinner of the Association. The Chairman was Captain H. Riall Sankey, C.B., C.B.E. (President of the Association), and the Vice-Chairman Mr. William M'Laren (Chairman of the Association). A glance at the Chairman's table led to the expectation of some first-rate speeches; and when the toast list was reached, this expectation was fully realized.

The Education of Engineers.

The Chairman, after proposing the Loyal Toasts, said he would like to explain that it was usual at these annual dinners to speak upon one subject which was of topical interest. When the choice of a subject or that evening had to be made, he thought of education, and then immediately thought of Dr. Hele-Shaw, because he knew this was a matter which Dr. Hele-Shaw had had at heart for a very long time. It was a subject of extreme interest, not only to their Association, but to all engineers.

Dr. H. S. Hele-Shaw, F.R.S., rising to propose the toast of "Success to the Movement for the Education of Engineers," remarked that the annual dinner of the Association afforded a splendid opportunity of bringing forward matters of moment and importance to its members. There was on this occasion an excellent reason for introducing the subject on which he was going to say a few words. During the past year there had been taken a step which was really of great value to the engineering profession. The Board of Education for the first time had themselves approached the Institution of Mechanical Engineers and asked their co-operation in granting national certificates in engineering. The importance of this step would be appreciated by them; for who was so well fitted to guide and control the education of the young engineer as the older members of the profession—the "engineers in charge?" The Institution of Mechanical Engineers felt proud that they should be asked to take this important step; and the arrangements had been satisfactorily made. All the technical schools of this country, without exception, had applied to come under the new scheme. Supposing a school was on the list as having a satisfactory curriculum, laboratory, and body of teachers, the Institution appointed assessors (all members of the Institution and practical men) who were responsible for the papers set and the standard of examinations. The certificates were being called national certificates in engineering, granted jointly by the Institution of Mechanical Engineers and the Board of Education. He happened to have been going over, unofficially, some of the papers from different parts of the country; and the point which had struck him was that the engineers examined themselves, and were no longer examined by the Government. It was making a very great difference in the result. When he himself was a teacher, his idea was to get his students through the examination; and if he could dodge the examiner, he thought himself so much the cleverer for doing it. But on looking at some of these papers, he saw that the teachers were being more severe on their students than the Government examiners were, because they knew perfectly well that, if they lowered their standard, they were going irretrievably to injure their school. It was having the effect of generally tightening things up; and this was a most magnificent result. They were trying to tune-up the technical schools all over the country so that they should not be below the level, in technical matters, of the university colleges. Then if a lad could only go to the technical schools, and not to a university, his certificate should have the same value, and admit to the Institution equally with that of the university. The Institution of Mechanical Engineers did not want to be an examining body, but had to be; and there were more than 250 candidates for the last examination. When the scheme was in thorough working order all over the country, they would hope—at least he, as Chairman of the Examinations Committee, would hope—to pass these examinations on to other people to undertake. At the same time, the Council did not regard the passing of an examination as the "be all and end all" of the engineer. There was a kind of education which engineers in charge had to undertake for themselves; they could not get anybody to do it for them. They must educate the working engineers under them, so that they might appreciate the value of what the technical schools were doing; and it was also up to them to educate these men as to the vital necessity of putting an end to the strife between men who should all be pulling together for the good of the country and the good of themselves.

Sir Cyril R. S. Kirkpatrick, M.Inst.C.E. (Chief Engineer to the Port of London Authority), in response, said he could not help being struck by the immense possibilities of the scheme of national certificates in engineering to which Dr. Hele-Shaw had just referred. This scheme seemed to him a link between theory and practice which had been badly wanted in connection with engineering; and he welcomed the proposal from the bottom of his heart.

Strife in the Engineering Industry.

Sir Alexander Richardson, M.P., proposed "The Association," and, in doing so, remarked that in engineering they had reached what was probably the greatest crisis that the industry had ever experienced. The trouble arose from absolute lack of confidence between the employer and the worker. Speaking of the fact that agreements entered into were not always kept, he said: "We are suffering in this country from the fact that leaders do not lead. The laws of economics are unaltered. It is for the leaders of the men to go to the men and establish in the minds of these men what constitute the unalterable laws of economics. An industry cannot give to the men more than it can afford; and the sooner we get this plain fact instilled into the minds of the men, the better it will be for the country. There is far too much talk about reducing wages; that is not the fundamental point. The fundamental point is that we have got to get the best out of every man and woman in this country in the way of production. If we get that, a man is entitled to what he earns. But he must earn it; and after he has earned it, it is all to the good of the nation."

In responding, the Chairman emphasized the importance, as one of the objects of the Association, of the promoting of good feeling among the members. It was a wrong thing to endeavour to secure one's own promotion at the expense of somebody else. One thought he would like them to take away was this: "Look after the job, and the job will look after you."

The Association Seeking Incorporation.

The Chairman said he would be pleased to offer a sum of £10 towards the fund that was being raised for securing incorporation. He suggested the formation of branches of the Association in different parts of the country, and even abroad.

Dr. Hele-Shaw said that, as a Past-President of the Association, he would be only too happy to follow the example of Captain Sankey in the matter of the contribution.

"Our Guests and Friends" was proposed by Mr. Alexander Ritchie, J.P.; the responses being by Brigadier-General Magnus Mowatt, C.B.E., M.Inst.C.E., M.Inst.Mech.E., and Mr. G. M. M'Kay (Sheriff of London). It was remarked that too much praise could not be given to Captain A. E. Penn (the Hon. Secretary) for the enormous amount of work he does on behalf of the Association.

The final toast was "The President," which was submitted by Mr. W. M'Laren, and supported by Captain Penn. The gratitude of the Council and members was voiced for the great amount of valuable time given by Captain Sankey to the affairs of the Association.

The Chairman said this was the second time he had been President; and he could tell them that the proposer and supporter of that toast were really the life and soul of the Association.

With the toast list was combined an excellent musical programme.

APPLICATIONS FOR PATENTS.

[Extracted from the "Official Journal" for May 24.]

Nos. 13,573 to 14,331.

Air Reduction Company, Inc.—"Retort material, and method of protecting bodies of retorts against action of gases." No. 13,622.

Aston, A.—"Prepayment gas meters, &c." No. 14,206.

Beard, G. F. H.—"Guide-framing of telescopic gasholders." No. 14,277.

Byrne, A. D.—"Device for regulating and mixing air with combustible substances." No. 13,696.

Cannon Iron Foundries, Ltd.—See Aston, A. No. 14,206.

Connery, W. M.—"Flues, flue sections, and reinforced walls." No. 13,617.

Cutler-Hammer Manufacturing Company.—"Pressure-regulating devices." No. 13,649.

Cutler-Hammer Manufacturing Company.—"Gas-calorimeters." Nos. 13,651, 13,652.

Dempster, Ltd., R. & J.—See Beard, G. F. H. No. 14,277.

Fairweather, H. G. C.—See Air Reduction Company, Inc. No. 13,622.

Fox, W. W.—"Illuminating appliances." No. 14,200.

Glover & Co., Ltd., G.—"Prepayment gas-meter mechanism." No. 14,323.

Helps, G.—"Gas manufacture." No. 14,058.

Igranic Electric Company, Ltd.—See Cutler-Hammer Manufacturing Company. Nos. 13,649, 13,651, 13,652.

Marwood, F. T.—"Gas-stoves." No. 13,737.

Oliver, F. R.—See Aston, A. No. 14,206.

Purves, J.—See Fox, W. W. No. 14,200.

Rudd, H. W.—See Fox, W. W. No. 14,200.

Snell, C. Scott-.—"Bunsen burners." No. 13,591.

Staples, C. W.—See Glover & Co., Ltd., G. No. 14,323.

Gas Profits at Blackpool.—At the beginning of the municipal year, it was estimated that there would be a balance on the Blackpool gas undertaking of only £600. On May 25, however, it was shown that the exact profit was £7322. The income for the year was £235,026, against £222,906 the year before. Working expenses were £210,178, against £201,537. Manufacture of gas cost £169,754, distribution £11,271, rents, rates, &c., £8962, management £6637, and general expenses £2610. The capital outlay on March 31 last was £261,406; loans and sinking fund, £77,676; loans redeemed, £102,339; and net indebtedness, £81,391. Since the works started in 1861, the aggregate net profit has amounted to £399,689. Of this, £305,570 has been given to the ratepayers; the balance being devoted to reserve and renewal funds.

Barry Electricity Scheme Proposal.—Diverse views were expressed at a combined meeting of the Barry Urban District Council, the Property Owners' and Ratepayers' Association, and the Chamber of Trade, held to further consider the question of the Council entering upon an electrical scheme. Mr. A. H. Seabrook, representing Sir Charles Bright and Partners, who are advising the Council, said that, as a commercial proposition, the installation of an electrical supply was one that required careful consideration. Mr. Carpenter urged the Council to consider their obligations to the gas undertaking, upon which a considerable sum of money was being expended. When this work was completed, the town would have a gas supply second to none. It was suggested that current for lighting purposes should be 9d., and for industrial purposes 4d. per unit; but workshop proprietors would not look at it at that price, as they required it at about 2½d. Replying to a question, Mr. Seabrook said the lowest cost of installation and wiring was now 22s. per point. Eventually it was decided to defer the matter for a conference between a Sub-Committee composed of members of the Council, the Chamber of Trade, the Ratepayers' Association, and the general public.

STOCK MARKET REPORT.

BUSINESS on the Stock Exchange last week was at reduced pressure, owing perhaps to some little awkwardness in getting back to *ante*-war conditions, and perhaps to the hot weather. Movements were variable and not of any magnitude either way. It was thin in Home Governments; War Loan and Victory being a little up, and Consols and Fundings being a little down. Home Rails were strong, though there was some realization before the close.

The Foreign Market fluctuated almost daily. Business in the Gas Market was quieter and less sensational; being devoid of the long array of big advances in quotation such as have characterized the past few weeks. But one should be prepared for a pause, and perhaps even for some little profit-snatching without taking alarm. Thus, one leading stock receded a couple of points; but it had already regained its *ante*-war quotation all but 3/4. The other changes were still in the upward direction—viz., Croydon "A," ditto "B" and "C" 2 each, North Middlesex 7 p.ct. 1/2, Wandsworth "A" 5, ditto "B" 5, ditto "C" 7, ditto new 10, ditto Wimbledon 5, ditto Epsom 3, ditto debenture 4.

The following transactions in gas during the week were recorded: On Monday, Aldershot 5 p.ct. maximum "C" 67, 67 1/2, Alliance and Dublin 65 1/2, Commercial 4 p.ct. 93, 93 1/2, European 13 1/4, 13 3/8, Gas Light ordinary 95, 95 1/2, 95 3/8, 96, ditto maximum 66 1/2, ditto preference 80, 80 1/4, 81 1/2, Imperial Continental 164, 164 1/2, 166, Primitiva preference 45s. 3d., South Metropolitan 96 1/2, 97, South Suburban 100 1/2 Tottenham "B" 100 1/2, Wandsworth, Wimbledon 88, 88 1/2, Swansea 7 p.ct. preference 101 3/8, ditto 6 1/2 p.ct. debenture 105, 105 1/2, Watford 7 p.ct. debenture 102. On Tuesday, Alliance and Dublin 65 1/2, Bristol 92 3/4, British 30 1/2, Commercial 4 p.ct. 92 1/2, 92 3/4, 93 1/2, ditto 3 1/2 p.ct. 92 1/2, 94, 94 1/2, ditto debenture 60, European 13 3/8, 13 1/2, 13 3/4, Gas Light ordinary 94 3/4, 95, 95 1/2, 95 3/8, ditto preference 81 1/8, ditto debenture 65, 65 1/2, Imperial Continental 164 1/2, ditto debenture 74 1/2, 75, Primitiva 15s. 6d., ditto preference 48s. 9d., South Metropolitan 96, 96 1/2, 96 3/4, 97, South Suburban 101, Croydon 5 p.ct. maximum "D" 93, 93 1/2, Swansea 7 p.ct. preference 102, Monte Video 5 p.ct. debenture 76 1/2, 77. On Wednesday, Commercial 4 p.ct. 93, 93 1/2, ditto 3 1/2 p.ct. 93 1/8, Continental Union 38, European 13 3/8, Gas Light ordinary 93, 93 1/2, 94, 94 1/2, 95 1/2, ditto maximum 65 1/2, 66 1/4, 67, ditto 10 p.ct. Bonds 176, Imperial Continental 164, 165, Primitiva 15s. 1 1/2d., ditto preference 45s., San Paulo preference 6, South Suburban 100, ditto debenture 94, Wandsworth Epsom 93 1/2, 94, Eastbourne 3 1/2 p.ct. "B" 93, 93 1/2, Rochester and Chatham 60, Swansea 7 p.ct. preference 101 1/2, 101 15/16, 102, 102 1/4, 102 1/2, ditto 6 1/2 p.ct. debenture 104 1/2, 105, 105 1/2. On Thursday, Alliance and Dublin 65 1/2, British 31 1/2, European 13 3/8, 13 5/8, Gas Light ordinary 92 1/2, 92 3/8, 93, 93 1/2, 94, 94 1/2, 94 1/2, ditto preference 80 1/2, Imperial Continental 164, 165 1/2, 165 5/8, Liverpool 89 5/8, North Middlesex 7 p.ct. 10 1/2, Primitiva 15s. 3d., ditto preference 47s. 6d., South Metropolitan 95 1/2, 96, 96 1/2, 96 1/4, 97, ditto debenture 61, ditto 6 1/2 p.ct. debenture 105 1/8, South Suburban 101, 101 1/2, Tottenham "A" 114 3/8, Wandsworth New 90, ditto Epsom 94, 95, Swansea 7 p.ct. preference 102 1/2, ditto 6 1/2 p.ct. debenture 104 1/2, 104 3/8. On Friday, Alliance and Dublin 65, Commercial 4 p.ct. 94, ditto 3 1/2 p.ct. 95 1/2, European 13, 13 1/8, Gas Light ordinary 93 1/4, 93 3/8, 94 1/2, 94 3/8, 94 1/2, ditto preference 80, ditto debenture 65, Imperial Continental 164 1/2, 165, 166, South Metropolitan debenture 62, South Suburban 100, Tottenham "B" 100, Swansea 7 p.ct. preference 101 1/2, 102 1/2, ditto 6 1/2 p.ct. debenture 104 3/8.

In the Money Market, firmness ruled at the opening of the week and gathered some strength. It gave way later; and the close was quite easy. The Bank rate is 4 p.ct., as fixed on April 13.

ANTE-WAR PRICES AND DIVIDENDS, LATEST DIVIDENDS, AND LAST WEEK'S BARGAINS.

Issue.	Share.	When ex-Dividend.	Ante-War Dividend & Bonus.	Last Dividend.	NAME.	Closing Prices, July 30, 1914.	Present Prices.	Lowest and Highest Prices of Bargains.
£			p.c.					
182,049	Stk.	Mch. 15	4	4%	Aldershot 4 p.c. Pref.	..	70—75	...
1,551,868	,,	Apl. 12	2½	3⅛%	Alliance & Dublin Ord.	59—64	62—67	65—65½
374,000	,,	Jan. 12	4	4%	Do. 4 p.c. Deb.	76—79	62—67	...
280,000	5	May 18	7½	4/-	Bombay, Ltd.	5½—6½	4½—5*	...
100,000	5	Feb. 23	16	7½%	Bournemouth Gas and Water: 5 p.c.	..	10½—11½	...
383,110	10	,,	7	7%	Bournemouth Gas and Water: B 7 p.c.	15—15½	9—10	...
115,000	10	,,	6	6%	Bournemouth Gas and Water: Pref. 6 p.c.	13½—14	8—9	...
162,065	—	Dec. 30	—	4%	Bournemouth Gas and Water: 4 p.c. Deb.	..	65—70	...
992,045	Stk.	Feb. 9	14	56/-	Brentford A Consolid.	261—266	88—93	...
734,920	,,	,,	11	55/-	Do. B New	204—209	88—93	...
55,000	,,	,,	5	5%	Do. 5 p.c. Pref.	109—111	80—85	...
221,400	,,	Dec. 15	4	4%	Do. 4 p.c. Deb.	91—93	75—80	...
214,775	,,	Mch. 15	11	11½%	Brighton & Hove Orig.	208—213	165—170	...
244,200	,,	,,	8	8½%	Do. A Ord. Stk.	154—159	118—123	...
1,287,500	Stk.	July 28	5	5%	Bristol 5 p.c. max.	..	..	92⅛
530,000	20	Mch. 15	12½	10%	British	44—45	29—31	30¼—31½
120,000	Stk.	Dec. 30	4	4%	Do. 4 p.c. Deb. Stk.	88—90	78—82	...
245,771	,,	,,	4	4%	Buenos Aires 4 p.c. Deb.	85—87	55—60	...
100,000	10	May 27	—	7%†	Cape Town & Dis., Ltd.	1½—2½	6½—7½	...
100,000	10	Apl. 27	—	4½%	Do. 4½ p.c. Pref.	4—6	5½—6½	...
100,000	Stk.	Dec. 30	4½	4½%	Do. 4½ p.c. Deb. Stk.	70—75	75—80	...
157,150	,,	Feb. 26	5	5%	Chester 5 p.c. Ord.	108—110	..	...
1,513,280	,,	Mch. 15	5/9/4	42/8	Commercial 4 p.c. Stk.	106—108	90—95	92⅛—94
560,000	,,	,,	3½	38/4	Do. 3½ p.c. do.	103—105	92—97	92⅛—93½
475,000	,,	,,	3	3%	Do. 3 p.c. Deb. Stk.	69¼—71½	57—62	60
800,000	,,	Dec. 15	4	—	Continental Union, Ltd.	76—79	37—42	38
200,000	,,	,,	7	—	Do. 7 p.c. Pref.	115—118	50—55	...
51,600	,,	Feb. 23	15	15%	Croydon A 10 p.c.	..	185—195	...
278,400	—	,,	12	12%	Croydon B and C 7 p.c.	..	145—155	...
492,270	Stk.	—	6	4½%	Derby Con. Stk.	123—125	80	...
55,000	,,	—	4	4%	Do. Deb. Stk.	102—104	65	...
1,002,180	10	Jan. 26	10	5/0	European, Ltd.	17½—18	13⅛—13⅜	13—13⅜
16,298,975	Stk.	Feb. 23	4/17/4	46/8	Gas Light and Coke: 4 p.c. Ord.	98—102	93—96	92½—96
2,600,000	,,	,,	3½	35/-	Gas Light and Coke: 3½ p.c. max.	76—79	65—68	65½—67
4,062,235	,,	,,	4	4%	Gas Light and Coke: 4 p.c. Con. Pref.	96—99	80—83	80—81½
4,674,850	,,	Dec. 15	3	3%	Gas Light and Coke: 3 p.c. Con. Deb.	72½—74½	63—66	65—65⅜
130,000	,,	Dec. 11	10	10%	Gas Light and Coke: 10 p.c. Bonds	..	..	176
82,500	,,	Sept. 14	5	3⅛%	Hastings & St. L. 5 p.c.	..	..	...
258,740	,,	Mch. 15	3½	2⅛%	Do. 3½ p.c.	87—89	52—57	...
70,000	10	May 18	11	5%	Hongkong & China, Ltd.	16½—16½	6—7*	...
86,600	Stk.	Mch. 15	9	9⅛%	Hornsey 7 p.c.	..	100—105	...
131,000	,,	,,	7⅞	7⅛%	Ilford A and C	151—154	120—130	...
65,780	,,	,,	6⅛	5⅝%	Do. B.	115—118	100—110	...
65,500	,,	Dec. 30	4	4%	Do. 4 p.c. Deb.	92—94	75—80	...
1,976,000	,,	May 18	9	5%	Imperial Continental	150—160	162—167*	164—166
404,800	,,	Feb. 9	3⅛	3⅛%	Do. 3½ p.c. Deb. Red.	84—86	72—77	74—75
235,242	,,	Mch. 15	6¼	6¼%	Lea Bridge Ord. 5 p.c.	119—121	83—88	...
2,498,905	,,	Feb. 26	10	37/6	Liverpool 5 p.c. Ord. A.	211—213	..	89⅛
					Liverpool 5 p.c. Ord. B.	146—148	..	...
306,083	,,	June 26	4	4%	Do. 4 p.c. Pr. Deb. Stk.	..	..	...
165,736	,,	Feb. 23	7/5/6	6%	Maidstone 5 p.c.	..	80—85	...
63,480	,,	Dec. 30	—	3%	Do. 3 p.c. Deb	..	48—51	...
75,000	5	June 11	6	3%	Malta & Mediterranean Met. of Melbourne 4½ p.c. Deb.	4⅛—4⅛	2⅛—3⅛	...
250,000	100	Apl. 3	4⅛	4⅛%	Monte Video, Ltd.	99—101	91—98	...
541,920	Stk.	Nov. 30	4	4%	Newcastle & Gatsh'dCon.	11½—12	65—70	...
1,875,892	,,	Feb. 23	4½	4½%	Do. 3½ p.c. Deb.	98½—99½	81½—82½	...
529,705	,,	Dec. 30	3⅛	3⅛%	North Middlesex 10 p.c.	82—83	69—71	..
15,000	10	Aug. 26	—	7/6	,, ,, 7 p.c.	..	12½—13	...
55,940	10	Mch. 15	7/14/0	10/1⅛	Oriental, Ltd.	14—15	10½—11½	10⅝
300,000	Stk.	May 18	8	8%	Ottoman, Ltd.	117—122	90—95*	...
60,000	5	—	10	—	Plym'th & Stonh'se 5 p.c.	7⅛—7⅞	2—3	...
188,120	Stk.	Dec. 30	—	6%	Portsea Island, B	..	69—71	...
60,000	50	Mch. 15	13	62/6	Do. C	128—131	87—90	...
100,000	50	,,	12	57/6	Primitiva Ord.	118—121	78—83	...
249,980	5	—	8	—	Do. 5 p.c. Pref.	5⅛—6	⅞—1	13/1½—15/6
499,960	5	—	5	—	Do. 4 p.c. Deb.	4⅛—5	2⅛—2⅞	45/—48/9
521,600	100	Dec. 1	4	4%	Do. ,, ,, 1911	91—93	70—75	...
600,000	Stk.	Jan. 26	4	4%	River Plate 4 p.c. Deb.	..	55—60	...
346,198	,,	Dec. 30	4	4%	San Paulo: 6 p.c. Pref.	85—87	55—60	...
150,000	10	Mch. 30	6	6/-	San Paulo: 5 p.c. Deb.	10⅛—11	5⅛—6⅛	6
125,000	50	Jan. 3	5	5%	Sheffield A	47—49	36—39	...
135,000	Stk.	Mch. 15	10	5%	Do. B	223—224	89—92	...
209,984	,,	,,	10	5%	Do. C	222—224	89—92	...
323,500	,,	,,	10	5%	Shrewsbury 5 p.c.	220—222	89—92	...
133,201	Stk.	Sept. 15	4	4%	South African	..	..	...
90,000	10	Oct. 28	9	8%	South Met Ord.	10½—11½	7—9	...
6,609,895	Stk.	Feb. 9	5/4/0	5%	Do. Red. Pref.	111—113	95—98	95½—97
250,000	,,	Jan. 12	—	5%	Do. 3 p.c. Deb.	..	96—98	...
1,895,445	,,	,,	3	3%	South Shields Con. Stk.	72½—74½	60—63	61—62
224,820	,,	Feb. 23	8½	8½%	S'th Suburb'n Ord. 5 p.c.	157—159	106—108	...
1,087,795	,,	,,	6	5½%	Do. 5 p.c. Deb. Stk.	114—116	97—102	100—101½
368,837	,,	Dec. 30	5	5%	Southampton Ord.	116—118	90—95	94
647,740	,,	May 18	5	5%	Do. 4 p.c. Deb. Stk.	99—102	63—68*	...
121,275	,,	Dec. 30	4	4%	Tottenham: A 5 p.c.	..	60—62	...
120,000	,,	Feb. 23	—	7½%	Tottenham: B 3½ p.c.	135—138	112—117	114⅜
782,275	,,	,,	6	5½%	Tottenham: 4 p.c. Deb.	115—117	98—103	100—100½
181,255	,,	Dec. 15	4	4%	Tuscan, Ltd.	87—89	77—82	...
182,380	10	Dec. 30	5	—	Do. 5 p.c. Deb. Red.	5—6	1—2	...
149,900	10	July 1	5	5%	Tynemouth 5 p.c. max.	93—95	45—50	...
236,476	Stk.	Mch. 15	3	3⅛%	Wandsworth, Wimbledon, and Epsom—Wandsworth A 4 p.c.	108½—109	68—70	...
30,000	,,	Mch. 15	8½	66/3	Do. B 3½ p.c.	151—156	110—115	...
855,636	,,	,,	6½	51/3	Do. C.	129—134	95—100	...
108,075	,,	,,	—	46/4½	New Ordinary	..	85—90	...
140,865	,,	,,	—	46/4½	Wimbledon 5 p.c.	..	85—90	90
352,000	,,	,,	6½	45/-	Epsom 5 p.c.	117—122	90—95	88—88½
98,000	,,	,,	6½	50/-	3 p.c Deb. Stk.	121—126	93—98	93—95
88,416	,,	Dec. 30	3	3%		66—69	57—60	...

* Ex Div. † Next dividend will be at this rate.

STOCKS AND SHARES.

By Order of the Directors of the

BURGESS HILL AND ST. JOHN'S COMMON GAS COMPANY.

SALE OF REDEEMABLE PREFERENCE STOCK.

MR. HORTON LEDGER, F.A.I., has been favoured with instructions to SELL BY AUCTION at the Colonnade Auction Mart, 157, North Street, Brighton, on Tuesday, June 13, 1922, at Three o'clock.

£2500 REDEEMABLE PREFERENCE STOCK, bearing Interest at the rate of 7 per Cent., in the BURGESS HILL AND ST. JOHN'S COMMON GAS COMPANY.

Particulars and Conditions of Sale can be obtained of the COMPANY, LONDON ROAD, BURGESS HILL, C. H. JAMES, Esq., Solicitor, BURGESS HILL, and 4, GRAND PARADE, BRIGHTON, or of the AUCTIONEER, at the COLONNADE AUCTION MART, 157, NORTH STREET, BRIGHTON. Telephone: 88 Brighton.

DISTRIBUTE THE "GAS SALESMAN"

Monthly Supplement among your GAS SALES STAFF.

Separate copies of each issue will be printed. Nos. 1, 2, 3, and 4 were published with the "JOURNAL" for Jan. 25, Feb. 22, March 29, and April 26 respectively.

Price per 100, 35s.; 50, 18s.; per doz., 4s. 6d.—plus postage; single copies, 5d. (stamps for single copies with order).

WALTER KING, LTD., "Gas Journal," 11, Bolt Court, Fleet Street, London, E.C. 4.

CURRENT SALES OF GAS PRODUCTS.

The London Market for Tar, Tar Products, and Sulphate.

London, *May* 29.

The principal outlet in the tar products market at present is for the supply of tar for road work; and the setting-in of the fine weather has created a considerable demand for this material. Pitch remains quite steady, and there are still inquiries for prompt shipment to the Continent. The price is about 70s. to 72s. 6d. per ton in bulk at makers' works. There is also quite a fair demand for creosote, at from 6d. to 6¼d. per gallon, and inquiries are on the market from America for two or three cargoes for fairly early shipment. The demand for benzole is increasing. Solvent naphtha, however, is dull; and the price is said to be about 2s. 6d. per gallon net and naked at works.

The sulphate of ammonia season for Home agricultural use is nearly finished; but there is still some activity in the export market.

Tar Products in the Provinces.

May 29.

The markets for tar products have been steady during the past week. There appears to be decidedly more inquiry for pitch, especially for prompt delivery. Buyers will not at present purchase for forward; but the general expectation is that before very long some purchases at any rate will be made for September-December. Creosote oil is decidedly firmer all round, and there is an improved demand. Benzole appears to be moving off steadily, and doubtless the position has been improved by the present weather conditions. Solvent naphtha is dull, and there is not very much inquiry. Heavy naphtha is quiet, but without alteration in price. Naphthalene is dull, and there are very few inquiries in the market. Carbolic acid is steady, with a tendency to improve. The market for cresylic acid is very firm, and a considerable business has been done at good prices for delivery to the end of the year.

The average values for gas-works products during last week were: Gas-works coal tar, 35s 6d. to 40s. 6d. Pitch, East Coast, 67s. 6d. to 70s. f.o.b. West Coast—Manchester, 65s. to 67s. 6d.; Liverpool, 65s. to 67s. 6d.; Clyde, 67s. 6d. to 68s. 6d. Benzole 90 p.ct. North, 2s. 1d. to 2s. 2d.; crude 65 p.ct. at 120° C., 1s. 5d. to 1s. 7d. naked at makers' works; 50-90 p.ct., naked, North, 2s. 1d. to 2s. 2d. Toluole, naked, North, 2s. 2d. to 2s. 5d. nominal. Coal tar crude naphtha in bulk, North, 9d. to 10d. Solvent naphtha, naked, North, 2s. 2d. to 2s. 4d. Heavy naphtha, North, 2s. 1d. to 2s. 3d. Creosote, in bulk, North, liquid, 4½d. to 4⅝d.; salty, 4½d. to 4⅝d. Scotland, 4d. to 4⅛d. Heavy oils, in bulk, North, 6d. to 6¼d. Carbolic acid, 60 p.ct., 2s. to 2s. 1d. Naphthalene, £12 to £15; salts, £5 to £5 10s., bags included. Anthracene, "A" quality, 5d. to 6d. per minimum 40 p.ct.; "B" unsaleable.

FROM A MARKET CORRESPONDENT.

Bye-Products Trade.

A better tone appears to have come over the market since my last report, although there is no very great change in quotations. There has been increased inquiry for pitch, which is somewhat firmer. Inquiries for next season's deliveries are not very great, but buyers are looking for 57s. 6d. to 62s. 6d. per ton. It is worth noting that lower prices for coal and fuel generally are to be looked for; but, on the other hand, there is still difficulty in obtaining suitable supplies of small coal at low prices. On the whole, the opinion seems to be that this market will not fall away very much. The demand for solvent naphtha continues very poor; and the market is inclined to give way. The demand from the rubber manufacturing industry at the present time is slow, and there are no indications that things are likely to improve. Solvent naphtha is quiet at 2s. 1d., and heavy naphtha at 2s. 3d. Carbolic acid is brighter, and further sales for continental deliveries have been made. Home users are also in the market again, and makers of crystal are not willing to take less than 6d. per lb. for it. They consequently are not prepared to give more than 1s. 10d. for crude 60's. Even at this figure there is not much profit for either manufacturer. Creosote is slightly firmer, and in some quarters 5½d. to 6d. per gallon is being asked. Benzole is on the dull side, and a reduction in the price is notified. At the same time, favourable weather for motor excursions should produce an increased demand for benzole as a motor spirit. Cresylic acid is quiet at 2s. 3d. for pale 97/99 and 2s. for dark 95/97. Naphthalenes are rather firmer; but no alteration in price is to be noted. Intermediate products are again better, but prices are without change.

Sulphate of Ammonia.

The home demand is now practically finished for the season; but the demand for export is improving, although business remains somewhat difficult on account of short supplies. It is very difficult to forecast the future course of this market; but it would seem that next season prices must be higher, as it would take some time before the coke-ovens are producing again. New prices for next season's shipment of nitrate of soda have been fixed; and these should enable buyers to form some opinion as to the relative value of sulphate of ammonia.

Reduction in Price at Abertillery.—The Abertillery Urban District Council announce a reduction in the price of gas for lighting of 6d. per 1000 c.ft., making the charge 6s., less 5 p.ct. for prompt payment. For power, the reduction is 1s. per 1000 c.ft., to 5s., less 5 p.ct. for prompt payment.

Inadequate Gas-Piping.—The Morecambe Gas Committee have decided to call the attention of local builders to complaints as to the quality of gas which are found to be attributable to the inefficiency and inadequacy of gas pipes and fittings often put into buildings, and to request builders to comply with the Gas Engineer's requirements in this matter.

A boosting plant is being laid down at the Forfar Gas-Works, with high-pressure main and district governor. The outlay is about £1500.

Messrs. A. & W. Richards are offering for sale by tender £20,000 of 6½ p.ct. redeemable preference stock in the Hayward's Heath District Gas Company. The minimum price of issue is par; and the stock is to be redeemed at par on July 1, 1932.

At a meeting of the guarantors in connection with the proposed Welsh National Exhibition to be held in Cardiff, it was decided, in view of the industrial conditions obtaining at present, to postpone further discussion of the matter until May, 1923, by when, it is hoped, the time will be more favourable.

It was reported to the Smethwick Town Council last week that the Gas Committee had decided that they could not entertain an application made for the remission of 50 p.ct. of the price charged for gas for a period of three months ending June to all consumers who had been unemployed for six months. An amendment to refer the matter back to the Committee was lost.

NOTICES TO CORRESPONDENTS, ADVERTISERS, AND SUBSCRIBERS.

No notice can be taken of anonymous communications. Whatever is intended for insertion in the "JOURNAL" must be authenticated by the name and address of the writer—not necessarily for publication, but as a proof of good faith.

COPY FOR ADVERTISEMENTS for the "JOURNAL" should be received at the Office NOT LATER than TWELVE O'CLOCK NOON ON TUESDAY, to ensure insertion in the following day's issue.

Orders to Alter or Stop PERMANENT ADVERTISEMENTS should be received by the FIRST POST on Monday.

UNDISPLAYED ADVERTISEMENTS: Situations Wanted, Six Lines and under (about 36 words) 3s.; each additional Line, 6d. Situations Vacant, Apparatus Wanted and for Sale, Contracts, Public Notices, &c., 9d. per Line—minimum, 4s. 6d.

TERMS OF SUBSCRIPTION to the "JOURNAL."

		One Year.	Half-Year.	Quarter.
United Kingdom	Advance Rate:	35/-	18/-	10/-
	Credit Rate:	40/-	21/-	11/6
Abroad (in the Postal Union) Payable in Advance		40/-	22/6	12/6

In payment of subscriptions for "Journals" sent abroad, Post Office Orders or Bankers' Drafts on London only are accepted.

All Communications, Remittances, &c., to be addressed to WALTER KING, LIMITED, 11, Bolt Court, Fleet Street, London, E.C. 4.

Telegrams: "GASKING, FLEET LONDON." Telephone: Holborn 6857.

OXIDE OF IRON

FOR SALE OUTRIGHT, OR ON LOAN.

SPENT OXIDE

PURCHASED IN ANY DISTRICT.

GAS PURIFICATION & CHEMICAL CO., LTD.,
Palmerston House,
Old Broad Street, London, E.C.2.

"VOLCANIC" FIRE CEMENT.
Resists 4500° Fahr. Best for Gas-Works.
Andrew Stephenson, Gresham House, Old Broad Street, London, E.C. "Volcanism, London."

J. & J. BRADDOCK (Branch of Meters Limited), Globe Meter Works, Oldham, and 45 & 47, Westminster Bridge Road, London, S.E. 1.
WET AND DRY GAS-METERS, PREPAYMENT METERS, STATION METERS AND GOVERNORS.
Repairs receive prompt attention.
Telephones: 815 Oldham, and 2412 Hop, London.
Telegrams—
"Braddock, Oldham," and "Metrique, Lamb, London."

J. E. C. LORD (Manchester), Ltd., Ship Canal Tar Works, Weaste, Manchester. Pitch, Creosote, Benzols, Toluol, Naphtha, Pyridine, all kinds of Cresylic Acid, Carbolic Acid, Sulphate of Ammonia, &c.

OXIDE OF IRON.
SPENT OXIDE BOUGHT.
BALE & CHURCH, LTD.
33, St. Mary at Hill, London, E.C.3.
Phone: Minories 1484.

"TORTO" FIRE CEMENT.
BALE & CHURCH, LTD.
33, St. Mary at Hill, London, E.C.3.
Phone: Minories 1484.

"KLEENOFF," THE COOKER CLEANSER
Tins for Sale to Consumers.
In Bulk for Works Use.
BALE & CHURCH, LTD.
33, St. Mary at Hill, London, E.C.3.
Phone: Minories 1484.